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Educational News and Editorial Comment

A PERMANENT FUND FOR EDUCATIONAL RESEARCH

The Department of Superintendence of the National Education Association launched a campaign a year ago for the creation of a fund of one million dollars the income of which is to be devoted to educational investigations. Superintendent R. J. Condon, the chairman of the committee which proposed the plan for the collection of this fund, was able to report at Cleveland that ten thousand dollars had been paid during the first year and that subscriptions are being received in promising numbers. The plan calls for subscriptions of $250 from school systems in all parts of the country, such subscriptions to be paid in five annual instalments.

Superintendents are urged to bring the matter to the attention of their boards of education and of the parents' associations connected with their schools. It is believed that the advantages which come to individual school systems from the reports prepared by committees of the Department of Superintendence are sufficient justification for the participation of all school systems in the collection of a permanent fund.

If the school people of the country show initiative in the endow-

ment of investigations, there will undoubtedly be attracted to the nucleus created by the schools large contributions from benefactors who are not now aware of the importance of educational investigations. At the present time the natural sciences are generously supplied with funds for research. Industry has learned the importance of promoting inquiry in the fields of physics, chemistry, and the biological sciences. The experiences of the war also convinced even the common people of the importance of scientific studies. The National Research Council, a central body created to foster research in the natural sciences, is housed in a magnificent building in Washington, D.C., and is able through liberal grants which have been made to its work to provide fellowships for scientific study and otherwise to promote the development of the natural sciences. A similar organization, known as the Social Science Research Council, is gradually accumulating funds and is promoting investigations in economics, political science, history, and the other social sciences.

In the meantime, education, the great central interest of all communities, waits for recognition. Education is not accepted by the Social Science Research Council as a social science. The National Research Council has a division of psychology and anthropology but has not found it expedient to devote any of its income to investigations in education.

It may prove to be an advantage to the science of education that it is not recognized by the older sciences at this stage of its development. The independence which it is forced to cultivate will, in the long run, result in a type of growth which it could not hope for if it were subordinated to other interests.

The plan to act boldly in maintaining complete independence and creating a sufficient fund to carry on investigations is certainly to be commended. School people should support the enterprise, which is one of the most significant movements launched in this generation.

TRAINING FOR THE PRINCIPALSHIP

At the suggestion of Superintendent Paul C. Stetson, of Dayton, Ohio, the meetings of the principals of schools in that city have been devoted during this school year to the discussion of methods of

training assistant principals. The result has been that the duties of principals have been defined with clearness and detail because, in formulating the instruction which should be given to their assistants, the principals have become aware of their own duties and rights. Furthermore, the superintendent and the Board of Education have made the results of the principals' meetings subjects of serious consideration and have incorporated into the rules of the school system the formulations which the principals have worked out.

The principals have gone so far in their development of plans for the training of their assistants that they realize the limitations of a single school as an environment in which training should be given. They are therefore planning to transfer their assistants from school to school in order that the range of their experience may be broadened.

The outcomes of the plan which has been in operation during the year are numerous. The school system will be supplied with trained candidates whenever a vacancy in a principalship occurs. The meetings of the principals have been rescued from the routine which often characterizes such meetings. The principals have exchanged ideas with regard to the conduct of schools and have trained themselves while discussing their assistants. Above all, they have contributed to the solution of some of the most serious administrative problems of the school system.

One administrative problem which always disturbs school systems is the problem of adjusting relations between the principals and the supervisors who come into the schools from the superintendent's office. Are these supervisors to be thought of as superior to the principal or as on a par with the principal in authority to determine the policies of the school? Dayton now has a definite and accepted understanding on such matters as are suggested by this question. The outcomes of the deliberations of the Dayton principals will be published in a yearbook. Other school systems can profit by adopting the plan. It will, however, be better for other systems to solve their problems in ways that are acceptable to their own officers than to imitate Dayton by adopting the solutions arrived at in that system.

PHYSICAL EXAMINATIONS OF SCHOOL CHILDREN

The school authorities of New York City have decided to require physical examinations of all children entering the schools beginning with September, 1929. The plan is outlined in the following statement published by the *New York Sun*.

A doctor's certificate as evidence of a physical examination will be required of all children entering the public schools beginning next September, according to an announcement made by Associate Superintendent Joseph M. Sheehan, in charge of health education.

The school authorities, Mr. Sheehan announced, have been studying for some time the effect of a child's physical condition upon his classroom work and have decided to take steps which will encourage parents to have remediable defects in their children corrected before they enter school.

Under the plan proposed, which will be explained in a circular soon to be distributed through the schools, children seeking admission to the schools must present a certificate from a physician indicating physical defects. These defects, Mr. Sheehan said, will be listed on the pupil's record card, and each teacher will be supplied with a copy.

By this method, Mr. Sheehan explained, the school authorities expect to have all minor defects corrected while the children are still young so that their progress in school will not be retarded. The plan of the school officials to shift to the parents responsibility of having the child undergo a physical examination is made necessary by the fact that only one hundred physicians are supplied by the Department of Health to examine school children, Mr. Sheehan said.

Special instruction to acquaint teachers with the proper way to teach a child to care for his physical well-being will be given.

Medical societies throughout the city are expected to follow the lead of the Medical Society of the County of Queens, which has adopted resolutions urging its members to examine worthy children for only a nominal fee or, in cases where the family is very poor, for no fee at all. The school and health authorities also are arranging for free treatment of children whose parents cannot afford to pay for the services of a private practitioner.

TRIAL PROMOTION

An article in the *Educational Research Bulletin* of the Los Angeles city schools describes an experiment in Long Beach, California, in which failing pupils who were required to repeat a grade were compared with other failing pupils who were given trial promotions. A part of the article, which was prepared by Vivian Klene, principal of the John Muir School of Long Beach, and Ernest P. Branson, director of research in that city, is as follows:

This study was undertaken during the school year 1927–28 because of a growing feeling that repeating a grade was of no real value. Two questions were to be answered by it:

1. Of two equated groups of potential failures, one group repeating and the other promoted on trial, which group shows the greater achievement during the succeeding term?

2. From results observed, does it appear that we are justified in requiring a pupil to repeat a grade?

Early in the first semester principals were asked whether they wished to co-operate in an experiment of this kind. With one exception, all enlisted. One week before the close of the term they reported on forms prepared for the purpose the names of all pupils who would be expected to repeat the grade. This report included the pupil's name, grade placement, chronological age, mental age, intelligence quotient, and sex. Upon the receipt of these blanks at the research department the experimenter, a counselor, and the research director assigned the failures to two equal groups, taking into account chronological age, mental age, intelligence quotient, and grade placement. The assignments were then reported to each school. One hundred and forty-one children were on these lists. They came from Grades II A–VI B, inclusive. Seventy-one were assigned to the trial-promotion group and were advanced to the next grade. Seventy were assigned to the repeat group and kept in the same grade a second term. The pupils were in fourteen elementary schools, each of which was under the care of a general supervisor.

Teachers and principals were asked to maintain an unbiased attitude toward the pupils on trial or repeating. Children and parents were not informed of the fact that an experiment was under way. It was felt that any undue interest on the part of either parents or children would influence results.

During the first week of the second semester educational tests were given to all pupils in both groups. Other forms of the same tests were given in June at the close of the term. All tests with their scoring and recording were in the hands of trained research workers.

As stated previously, this experiment started with seventy children in each group. Because of the shift of tourist population, it concluded with about fifty in each group. In spite of the number of cases, the results are highly significant coming from a city where the normal failure rate is low. Those failures that do occur are likely to be serious ones and are most likely to be cases new to the system. . . . .

Conclusions

1. It seems to be true, in the cases recorded, that, of two equated groups of potential failures, the trial-promotion group shows greater progress during the succeeding term than does the repeating group.

The experiment reveals:

a) Children of normal ability gain more from trial promotion than do children of equal ability from repeating a grade.

b) Children of less than average ability gain little more by repeating a grade than they gain by trial promotion.

c) Pupils in Grades IV–VI profit more from a trial-promotion plan than do those in Grades II and III.

2. The indications are that we are not justified in requiring a child of normal ability to repeat in Grades IV–VI.

a) The trial group shows greater average gain in educational tests than does the repeat group.

b) On the basis of teachers' marks, the trial group sustains itself with success, with the mode at 3 [on a five-point scale], the average grade.

c) The record of promotion at the close of the term shows 90 per cent of the trial group promoted.

3. The evidence seems to indicate that there is more justification for requiring pupils to repeat in Grades II and III than in Grades IV–VI.

SUPERMAXIMUM SALARIES

One of the most difficult features to provide in a salary schedule is appropriate recognition of high merit. Teachers usually prefer to have the boards of education which employ them adopt schedules which depend on length of service rather than on the judgments of supervisory officers as to their efficiency. They seem to be generally reluctant to allow supervisors to classify any individuals above the group to which good teachers are assigned.

The New York City school system has recently passed through a period of vigorous and often acrimonious discussion of the so-called "supermaximum." The decision was reached some months ago that no teachers in New York City are to be classified above the general schedule. The discussion seems to have facilitated, however, the elevation of the general requirements for admission to the teaching staff. The *New York Sun* discusses the matter at length in the following statement, which includes interesting information about a number of city school systems that have supermaximums.

The decision of the New York school authorities to require attendance at professional or cultural courses as evidence of "professional alertness" before salary increments may be granted to teachers marks the latest step in the development of a system which has come to be accepted in 450 cities as the approved method of relating a teacher's salary to the quality of her work in the classroom.

In New York, beginning September, 1930, no teacher who has passed her three-year probationary period of appointment and who is below the maximum rate of pay will be rated satisfactory at the end of the year unless she has com-

pleted during that year a course of thirty hours. It is expected that the Board of Superintendents will draw up a schedule of equivalents for the thirty-hour course.

This requirement bears little resemblance to the "supermaximum" idea, which was first suggested in New York City by the Citizens' Committee on Teachers' Salaries. But it is an outgrowth of that idea, and, while it is new so far as teachers in this city are concerned, it has been applied in one form or another in numerous other places.

A recent survey by the National Education Association discloses that, of the 449 cities throughout the country which employ some type of supermaximum salary to encourage teachers to keep pace with advanced educational methods, 20 per cent have established the acquisition of additional professional training after appointment as the basis for qualifying for such advanced salary.

Prominent among the cities employing systems akin to this are Trenton, Cincinnati, Omaha, Oakland, Kansas City (Missouri), and Washington.

The requirements as laid down in these cities vary from those to be exacted of New York City teachers. Under the Trenton system the schedule for elementary-school teachers runs from $1,100 to $2,400 in fourteen years. After the maximum is reached, a salary of $2,500 may be obtained if a teacher can show the completion of a half-year of professional preparation beyond standard normal-school training, a salary of $2,600 for a year beyond standard preparation, $2,700 for a year and a half, and $2,800 for two years.

The new Cincinnati schedule makes length of service and preparation the basis for advancement to the higher salaries. The schedule says:

"Because of the practical impossibility of rating teachers subjectively, college graduation is set up as the standard of preparation for all future appointments of classroom teachers, and pay schedules are grouped in equivalents of years of college preparation. On the other hand, college degrees or their proportionate equivalents give no assurance of professional interest or adequate teaching, so reasonable amounts of approved cultural and professional study, coupled with satisfactory work and growth in teaching power, will be the conditions upon which teachers will receive their annual increases or even retain their maximum salaries when they have attained them."

The rules and regulations of the Board of Education of Omaha, which apply to principals and supervisors as well as teachers, lay down these conditions:

"Principals, teachers, assistant supervisors, or supervisors who have served at least one year at the current maximum salary may be granted an increase of $100 in salary upon presentation of six credits from an approved university, college, or normal school. A second increase of $100 will be granted for six additional, or a total of twelve, credits. A final increase of $100 will be granted for a third set of six, or eighteen, credits. Advance in salary granted on this basis shall in no case exceed $100 per year.

"At least one-third of the work represented by each group of six credits

must be in education. All courses must be approved in advance by the committee on requirements for promotion.

According to the National Education Association survey, 34 per cent of the cities with supermaximum salaries make merit ratings or some similar measurement of teaching performance the principal basis for advancement to the supermaximum, while an additional 13 per cent combine ratings with the amount of professional training.

Oakland has set the normal maximum after ten years of service at $2,460 for elementary-school teachers, $2,820 for high-school teachers, and $3,660 and $5,160 for principals of large elementary and high schools. A first special maximum of $120 may be obtained after a year on the normal maximum if a candidate presents twenty units of credit earned while in the employ of the Oakland public schools and "a research study on some approved problem in education affecting the Oakland public schools, which shall be adjudged the equivalent of a thesis for the Master's degree."

The second special maximum of $180 may be obtained after two years at the normal maximum and after the applicant has presented "a creative contribution to education made while in the service of the Oakland public schools and upon a problem directly affecting the Oakland public schools, such contributions to consist of the equivalent of a dissertation for the Doctor's degree."

In Kansas City the "super-salaries provided are not given for excess in preparation alone but depend primarily and chiefly upon merit or the quality of teaching. The excess in professional preparation above the minimum requirements has no value to the school unless it results in better service in the school."

To receive the higher salaries there, teachers must have a "progressive, loyal, professional, and helpful attitude toward all school interests and show a spirit of willing service both in classroom and in general school activities—all of which shall be a matter of common recognition by superintendents, supervisors, and principals."

The plan employed by Washington, D.C., as described by the National Education Association survey, follows.

"Washington has developed a plan into which a number of elements enter, the prepotent one being recorded success in teaching based upon ratings. In this city the normal maximum for elementary teachers is $2,200, and the supermaximum $2,600, and for high-school teachers, $2,800 and $3,200.

"In order to be considered for advancement to a supermaximum, a score of not less than 700 points must be made on the examination. A teacher may take the examination after having been on the normal maximum one year. Approximately 250 Washington teachers had so qualified in June, 1927. Of this number, fifty-six entered the examination; forty-one passed and were advanced to the supermaximum salary. At the close of the school year 1927–28, fifty-seven teachers took the examination, and twenty-seven qualified for the higher salary."

Commenting on the system of relating measures of teaching efficiency to salary paid, the survey says:

"It is as yet too soon to decide whether the movement is a wise one or whether professional efficiency is best encouraged through other available means than direct and more or less automatic tie-up with the salary received. Only longer, carefully evaluated experience and additional research can answer these questions."

THE ALLEGANY SCHOOL OF NATURAL HISTORY

The following announcement has been issued by the New York State Museum, Albany, New York.

An outdoor training school of natural history, which has established a high reputation among the growing number of such centers for field instruction and which has an exceptionally interesting and varied terrain for its purposes, is the Allegany School of Natural History, conducted by the Buffalo Society of Natural Sciences in co-operation with the New York State Museum and affiliated with the University of Buffalo, which will be open for its third season from July 5 to August 24 in the Allegany State Park.

This school was established in 1927 to meet the need for well-qualified teachers of natural history which has developed with the increasing demand for instruction in the natural sciences in public preserves—national, state, county, and municipal—and in private camps and summer schools. The personnel of such centers of outdoor instruction now numbers many thousands, of whom a large proportion, teaching such sciences as zoölogy, botany, physiography, and geology, require wide and accurate knowledge and skill in leadership to give their students all that they should receive from such summer sessions in the wilderness. Park officials, school directors, and others responsible for the quality of such instruction are yearly seeking better talent for teachers of natural history.

The sponsors of the Allegany School of Natural History determined at its beginning to seek high quality of instruction through a faculty of exceptional ability rather than to enrol a large number of students. That they have achieved this result is evident from the comments of leaders of other schools in this field and of intelligent observers of the features offered in the curriculum and of the use made of the opportunities for study in the Allegany State Park and surrounding territory.

The school is located on a new lake made by damming Quaker Run, a tributary of the Allegheny River, which drains the southern part of the Allegany State Park, in Cattaraugus County, in southwestern New York, seventy miles south of Buffalo. It is within a mile of the Pennsylvania line, across which is a larger public preserve, the Allegheny National Forest, containing virgin timber and large wild game. The Allegany State Park occupies a tract of sixty thousand acres in the bend of the Allegheny River where it enters New York from

its source in Pennsylvania and returns to Pennsylvania on its way to the Ohio. It is largely second-growth timber, now returning to large size, with some virgin stands and, under the park policy of maintaining 90 per cent of it in a wild state, is yearly recovering its pristine qualities.

In forest associations, the park's predominant trees are of the beech-birch-maple types, northern in affinities. An even more striking evidence of a former subarctic climate is a small stand of balsam fir, probably a relic from postglacial time. The valleys have more southern-forest types—oak, hickory, and chestnut.

Geological features of interest in the park and environs are phases of glaciation found at the terminal moraine of the great continental ice sheets which stopped north of the bend of the Allegheny and left the park area uncovered by the usual débris, and richly fossiliferous strata everywhere in the region.

The Allegany School of Natural History is sponsored by the New York State Museum of the University of the State of New York, Dr. Charles C. Adams, director of the museum, having general supervision of the educational policy; by the Buffalo Society of Natural Sciences, of which Chauncey J. Hamlin, who brought about the establishment of the school, is president; and by the Allegany State Park Commission, which provided the site, created the lake nearby, and built the cabins and other structures wherein the school is housed. The school is provided with forty cabins, each with two sleeping-rooms and a living-room with sides half-walled and half-screened but closable by shutters, and with a stove, electric lights, and nearby running water. The main building, forty-eight by eighty-six feet, has an assembly room, a library, laboratories, a dining-hall, and a museum.

The teaching staff will again be headed by Dr. Robert E. Coker, professor of zoölogy, University of North Carolina, who has been director since the school was established and who has set high standards in inspiring his students to develop the ability "for stimulating others to the study and appreciation of nature." Dr. Coker will teach field zoölogy. He will send circulars of information to those who will address him until June 15 as follows: Director, Allegany School of Natural History, Box 950, Chapel Hill, North Carolina.

Professor Allen C. Tester, of the State University of Iowa, will again teach field geology. Mr. Aretas A. Saunders, of the Central High School, Bridgeport, Connecticut, will teach the natural history of birds. Mr. William P. Alexander, field naturalist of the Buffalo Society of Natural Sciences, will again teach general nature-study. A new member of the faculty will be Leslie A. Kenoyer, professor of biology, Western State Teachers College, Kalamazoo, Michigan, who will teach field botany.

THE NURSERY SCHOOL OF THE UNIVERSITY OF CALIFORNIA

The University of California has issued an attractive pamphlet describing its nursery school. The purpose of the school, its plant,

and the conditions under which children are admitted are described as follows:

In establishing a nursery school at the University of California as a part of the Institute of Child Welfare, a fourfold aim was proposed: To contribute to the welfare of the children enrolled; to set up a laboratory for the study of child development by expert research workers; to collect information concerning child-training for use in parent education; and to offer university students, in a limited number, an opportunity for the directed observation of children. . . . .

The California Congress of Parents and Teachers co-operates with the University by contributing the rental of a large three-story building on the edge of the University campus for the use of the Institute. This former dwelling, only slightly remodeled, is now admirably suited to the needs of the nursery school. The large inclosed yard offers a variety of sun and shade, with sand boxes, a cement wading pool, a shed for use in rainy weather, and inviting pathways which lead among shrubs and flowers. A portion of the yard is covered with macadam so that it never becomes too damp for play. A unique feature is a "cloister" for the parents, where they may observe the children at play without interfering with their free activity. The play materials are simple and adaptable to a variety of uses; they consist chiefly of large and small boxes, wagons, wheelbarrows, pails, shovels, boards, and building blocks. In one corner of the yard a bench has been set up, where the older children may work at simple carpentry. According to their current interests, the children play in groups centered at various parts of the yard, and each child has free access to any of the groups and to any of the classes of play materials. It may be mentioned that a duck and a rabbit are important members of the community.

For "indoor" days there is abundant play space on the ground floor of the building. Each room is equipped with tables, chairs, benches, and shelves, which have been built to suit the needs of little children. Play materials are always within reach, and their arrangement encourages the children to choose only what they need and to put things back in place after they have been in use. In one of these rooms the daily luncheon is served, partly by adults and partly by the children themselves.

In a cloakroom individual lockers have been built along the walls, with a convenient bench in the center. The lockers contain the children's wraps, slippers, and an extra outfit of clothes. Adjoining is the lavatory, fitted with children's bowls and toilets and with hooks for individual towels, wash cloths, and combs. The cloakroom and lavatory are so situated as to be readily accessible from either the yard or the indoor play space. . . . .

Children between the ages of eighteen months and thirty-six months are admitted to the nursery school as vacancies occur and in the order of application, upon the following conditions:

1. The child must be healthy and must be immunized against smallpox and diphtheria.

2. The parents must agree to co-operate with the nursery-school staff in a consistently wholesome régime for the child.

3. The parents must agree to withdraw the child from the school upon the request of the director.

4. The parents must agree to pay tuition at the rate of ten dollars a month for each child.

5. The parents must agree to keep such home records as will be of assistance in planning the training program for the child and to attend individual and group conferences when requested to do so.

6. The parents must agree to take all reasonable precautions against sending the child to the nursery school when he or she is suffering from any communicable disease.

RULES FOR CONSERVING EYESIGHT

Gladys L. Dunlop, second assistant supervisor in the Sight Saving Department of the public schools of Detroit, Michigan, has published in the *Detroit Educational Bulletin* an article entitled "Conserving the Eyesight of School Children." A part of the article is as follows:

Visits to various classrooms in the city have revealed the fact that certain schoolroom procedures must be modified if we are to reduce this large percentage of children suffering from defective vision.

To call attention to a few of the conditions, environmental and instructional, which are the means of forcing eyestrain upon the child may serve as a reminder to administrators and teachers that not enough attention is being given to this important question. Casual observations prove that unnecessarily long written lessons are assigned, long periods of close work are permitted, window shades are not adjusted to admit the best light, and, in certain classrooms, children are allowed to sit facing the light. As long as these conditions exist, we are reducing the power of the individual child and increasing the percentage of children who have impaired vision.

The Sight Saving Department makes the following suggestions to teachers:

1. Never ask a child to sit facing a light.

2. Seat all children having defective vision at the front of the room.

3. Have the room properly lighted at all times. Shades should frequently be adjusted to prevent glare when the sun is shining directly into the room and so arranged at other times as to permit an abundance of light to enter through the upper part of the windows.

4. Watch children to observe symptoms of eyestrain, such as headaches, red or inflamed eyes, blurred vision, and granulated eyelids. These and other symptoms which the careful teacher will observe are indications that the children may be suffering from some form of defective vision. Such cases should be reported to the school nurse, who will promptly arrange for an examination.

5. Do not assign unnecessarily long written lessons.

6. Check frequently to see that those children who are supposed to be wearing glasses have them on.

7. See that all glasses worn by the pupils are kept clean and properly adjusted. This is important because with glasses not in adjustment or lenses out of focus an extra strain is put on the eyes.

The Sight Saving Department also suggests that the following simple rules of eye hygiene be taught the children. Many individuals have never been warned of serious injury which may result to the eyes from improper use and care.

1. Take care of your sight; upon it depend your safety and success.

2. Vision affects posture, and posture affects vision. Always work in an erect position.

3. Hold books thirteen to fifteen inches from the eyes.

4. Never face the light.

5. Keep books clean. A soiled page is difficult to read.

6. Rest eyes frequently.

7. Read with a clear good light falling from above, over the left shoulder.

8. Avoid books printed indistinctly, in small type, or on glossy paper.

9. If your eyes ache, or if you have trouble in seeing things distinctly, have your eyes examined.

If children are taught these simple rules, the instruction will not only tend to inculcate the correct habits in the children but also serve to cultivate practices of classroom eye hygiene in teachers.

COMPARISON OF EDUCATIONAL RESULTS IN LARGE AND SMALL RURAL SCHOOLS

The Bureau of Education has published a bulletin entitled *Educational Achievements of One-Teacher and of Larger Rural Schools*, prepared by Timon Covert, assistant specialist in rural education. This bulletin presents a summary of the available results of achievement tests in the rural schools of several states.

The findings are stated in brief as follows:

Sizes of rural schools and numbers of pupils included in each of the surveys were as follows: Indiana, one-teacher, 2,852; six or more teacher, 714. Kansas, one-teacher, 1,232; third-class city schools (villages with populations between 500 and 2,000), 1,008. Kentucky, one-teacher, 2,947; six or more teacher, 261. New York, one-teacher, 2,050; four or more teacher, 2,835. Oklahoma, one-teacher, 3,169; consolidated, 2,527. Texas, one-teacher, 643; five or more teacher, 2,430. Virginia, one-teacher, 186; four or more teacher, 2,259. West Virginia, pupils in nine one-teacher schools and those in six three-teacher schools. . . . .

The data presented show that pupils in large rural schools made higher

median reading scores in thirty-nine of the fifty-one comparisons and lower in twelve than those of the corresponding grades in one-teacher schools. In terms of percentage, the median scores were higher in large schools in 76.5 per cent of the total number of comparisons made.

In arithmetic and in spelling, as in reading, pupils in large rural schools made a much larger percentage of the higher median scores than those of corresponding grades in one-teacher schools. In a total of eighty-three comparisons between arithmetic ability of pupils in the two types of rural schools included in the eight surveys, seventy-three, or 87.9 per cent, show higher, and nine, or 10.9 per cent, lower median scores (in one comparison they were equal) for pupils in large rural schools, grade for grade, than for those in the one-teacher schools. In a total of thirty-one comparisons of writing ability, twenty-five, or 80.6 per cent, show higher, and six, or 19.4 per cent, lower median scores for pupils in the large schools, grade for grade, than for those in the one-teacher schools.

Of the eight state survey reports, six show that all comparable median reading, arithmetic, and writing scores were uniformly higher in large than in one-teacher rural schools. In two, the Oklahoma and the West Virginia studies, some scores were higher in one-teacher schools. In Oklahoma the median scores were higher in four of a total of eight comparisons in reading, in five of a total of eleven comparisons in arithmetic, and in two of a total of six comparisons in writing for pupils in one-teacher schools than for those of the corresponding grades of large rural schools. In West Virginia the median scores were higher in eight of a total of twelve comparisons in reading, in four of a total of six comparisons in arithmetic, and in four of a total of six comparisons in writing for pupils in one-teacher schools than for those of the corresponding grades of large rural schools.

Since the tests in each survey were given to large numbers of pupils, they should be representative. Assuming that pupils tested in both types of rural schools were equally well classified, the summaries indicate that pupils attending large rural schools in various sections of the United States learn to read, spell, and solve arithmetical problems decidedly better than those who attend one-teacher schools. Summaries of similar results in other subjects confirm the statement that pupils trained in large rural schools make higher comparable scores on educational tests than those trained in one-teacher schools.

These results cannot be explained on the assumption that pupils in one-teacher schools are duller than are the pupils in larger schools. It is far more reasonable to conclude that consolidation makes possible better organization and instruction. Consolidation also provides a large enough social group to generate pupil enthusiasm and provide for legitimate competition.

PROPAGANDA

While the committee of the National Education Association appointed to study the introduction into the schools of materials prepared by business corporations is making inquiry as to the way in which such materials are treated by school authorities, the corporations continue to prepare and distribute very useful information. One of the most recent examples is "Uncle Sam's Farm," a map project prepared and offered for free distribution by the Quaker Oats Company, 80 East Jackson Boulevard, Chicago, Illinois.

The Quaker Oats Company will send to any interested teacher who asks for them an outline map of the United States, thirty and one-half by forty-four inches in size; a set of colored illustrations depicting the nation's chief farm products, the illustrations to be cut out and pasted in the states producing the farm products; and a teachers' guide.

The facts contained in the teachers' guide are derived from bulletins of the Department of Agriculture. Teachers who fear contamination from propaganda should at least take advantage of the references supplied by the Quaker Oats Company and secure from the Superintendent of Documents, Government Printing Office, Washington, D.C., the bulletins listed:

U.S. Department of Agriculture, Separate from Yearbook 1926, No. 932, *Statistics of Grains* 15c
U.S. Department of Agriculture, Separate from Yearbook 1926, No, 933, *Statistics of Fruits and Vegetables* 10c
U.S. Department of Agriculture, Separate from Yearbook 1926, No. 935, *Statistics of Farm Animals and Animal Products* 20c
Crops and Markets, published monthly by the U.S. Department of Agriculture (price of single copies not listed) per year 60c

The Quaker Oats Company has summarized in the teachers' guide mentioned the information contained in these bulletins, but some teachers may prefer to find the statistics themselves. To one who is convinced that propaganda is not the worst evil in the world the map project of the Quaker Oats Company looks like a very useful and legitimate form of advertising.

STUDENTS' OPINIONS OF THEIR BEST AND POOREST TEACHERS

DAVID NEWMARK
Philadelphia Normal School

The investigation here reported was conducted because the writer believes that normal-school students should analyze the characteristics possessed by teachers, efficient as well as inefficient. Lists of characteristics of good teachers and poor teachers should be of value to normal-school students. They should use these as "pedagogical guides" while striving toward the development of teaching skill.

In June, 1927, eight groups of students in the Philadelphia Normal School were asked to respond to the following directions.

1. Think of your best elementary-school teacher. Then make a list of the characteristics he or she possessed which caused you to select this teacher as your best teacher.

2. Now think of your poorest elementary-school teacher and make a list of the characteristics he or she possessed which caused you to select this teacher as your poorest teacher.

Some of the students said that they could readily recall their best and poorest high-school teachers but not their best and poorest elementary-school teachers. Since the experiment was conducted for the purpose of getting the future teachers to think about characteristics, the students were told that they could use high-school teachers instead of elementary-school teachers as bases for their responses if they so desired.

Data were obtained from 223 students in eight classes distributed as shown in Table I.

Before making lists of the characteristics of the best and poorest teachers, the writer carefully analyzed the papers submitted by the 223 students. He also examined the score cards for rating teachers formulated by Elliott, Boyce, Ruediger, Strayer, Rugg, and Connor. Moreover, he read the following articles dealing with the characteristics of successful and unsuccessful teachers.

Grace E. Bird, "Pupils' Estimates of Teachers," *Journal of Educational Psychology*, VIII (January, 1917), 35–40.

William F. Book, "The High School Teacher from the Pupil's Point of View," *Pedagogical Seminary*, XII (September, 1905), 239–88.

Henry Buellesfield, "Causes of Failures among Teachers," *Educational Administration and Supervision*, I (September, 1915), 439–52.

F. B. Knight, "Qualities Related to Success in Elementary School Teaching," *Journal of Educational Research*, V (March, 1922), 207–16.

F. B. Knight, *Qualities Related to Success in Teaching*. Teachers College Contributions to Education, No. 120. New York: Teachers College, Columbia University, 1922.

TABLE I

NUMBER OF STUDENTS SUPPLYING INFORMATION

Class	Number of Students
1	33
2	31
3	23
4	33
5	34
6	35
7	21
8	13
Total	223

H. E. Kratz, "Characteristics of the Best Teacher as Recognized by Children," *Pedagogical Seminary*, III (June, 1896), 413–18.

Sherman Littler, "Causes of Failure among Elementary School Teachers," *School and Home Education*, XXXIII (March, 1914), 255–56.

Robert H. Morrison, "Factors Causing Failure in Teaching," *Journal of Educational Research*, XVI (September, 1927), 98–105.

Cleda Virginia Moses, "Why High-School Teachers Fail," *School and Home Education*, XXXIII (January, 1914), 166–69.

W. J. Osburn, "The Personal Characteristics of the Teacher," *Educational Administration and Supervision*, VI (February, 1920), 74–87.

William Carl Ruediger and George Drayton Strayer, "The Qualities of Merit in Teachers," *Journal of Educational Psychology*, I (May, 1910), 272–78.

This procedure was adopted in an effort to select terms that would represent discrete teacher characteristics. In spite of the precautions taken, the writer must confess that the characteristics listed overlap. It is practically impossible, it seems, to make a list of teacher characteristics which are mutually exclusive. Perhaps, on

the other hand, the overlapping is desirable rather than undesirable. The characteristics are classified according to emphasis. For example, under "human" were placed such statements as the following: "He was human." "She was a real woman." "He was a regular fellow." "She was a human being." Under "impartial" were placed all the statements made by the students to the effect that the teacher was fair-minded and gave all a "square deal."

TABLE II

CHARACTERISTICS OF THE BEST TEACHERS

Characteristic	Class 1	Class 2	Class 3	Class 4	Class 5	Class 6	Class 7	Class 8	Total	Per Cent
1. Skilful in "getting ideas across" to pupils	38	31	21	32	38	21	18	10	209	18.95
2. Human	17	20	17	5	13	9	10	11	102	9.25
3. Impartial	10	17	11	12	19	8	9	7	93	8.43
4. Good disciplinarian	9	12	13	8	19	9	6	10	86	7.80
5. Sympathetic	13	14	6	13	16	11	3	4	80	7.25
6. Pleasing personality	6	6	9	15	11	10	9	3	69	6.26
7. Sense of humor	7	12	4	4	11	4	9	4	55	4.99
8. Neat personal appearance	11	6	4	10	8	0	3	2	44	3.99
9. Always eager to co-operate	5	10	5	6	5	4	2	4	41	3.72
10. Agreeable voice	3	7	1	14	3	1	6	2	37	3.35
11. Understands children	5	11	4	2	7	3	3	2	37	3.35
12. Broad grasp of subject matter	4	7	6	6	2	3	4	2	34	3.08
13. Good self-control	3	7	2	7	6	2	3	2	32	2.90
14. Good looking	3	5	1	6	10	3	1	1	30	2.72
15. Careful about records, supplies, and classroom routine	5	3	4	6	5	3	1	0	27	2.45
16. Common sense	0	6	3	5	3	4	3	2	26	2.36
17. Interested in pupils	3	2	1	7	4	2	4	1	24	2.18
18. Enthusiastic	1	2	1	5	4	3	3	1	20	1.81
19. Healthy	0	3	2	1	0	1	5	1	13	1.18
20. Excellent character	1	1	2	3	0	2	0	0	9	0.82
21. Sincere	2	3	1	1	0	1	0	1	9	0.82
22. Resourceful	2	0	2	1	0	2	0	0	7	0.63
23. Tidy classroom	3	2	1	0	0	0	0	0	6	0.54
24. Prompt	2	0	1	0	1	1	0	0	5	0.45
25. Lesson well prepared each day	1	1	1	0	0	0	1	0	4	0.36
26. Command of English	0	1	0	0	1	0	0	1	3	0.27
27. Progressive	0	0	0	1	0	0	0	0	1	0.09
Total	154	189	123	170	186	107	103	71	1,103	100.00

Table II shows the characteristics of the best teachers submitted by all classes. Class 2, consisting of thirty-one students, submitted the largest number of characteristics (189). Last place is held by

Class 8, which listed seventy-one characteristics. It was expected that Class 8 would submit the smallest number of characteristics since there were but thirteen students in this class.[1]

The twenty-seven different characteristics are listed in Table II in the order of frequency of appearance. The total frequency is 1,103.

The students wrote on their papers many interesting reasons why they selected particular teachers as their best teachers. Some of them may be quoted as follows:

1. He was never over our heads.
2. She was in love with her work.
3. Anyone could get along with him.
4. She allowed us to express *our* opinions from time to time.
5. She was a real peach.
6. He did not hand out any "applesauce" to us.
7. She expected us to work, and she worked with us too.
8. She had a contagious smile.
9. She was an oasis on the educational desert.
10. He was a regular fellow.
11. She was a good sport—allowed us to talk and eat until the last bell rang.
12. She was a lady in every respect.
13. He let us watch the fire engines go by.
14. She was cool in warm weather, a restraining, cooling influence on the class.
15. He was formerly a basket-ball star and first-base man in a western college.
16. He did not keep the atmosphere of a Sahara Desert in his classroom.
17. He spoke good English but wasn't afraid to use slang.
18. She did not give too much home work.
19. She was not young and not old.
20. She never spoke to us about discipline and therefore never had a discipline problem with our class.
21. She was young and stylish.
22. Her punishments were real ones and really cured the culprit.
23. No one ever tried to cheat because he didn't provide any occasion.
24. She once gave us a picnic.
25. He was as firm as an army officer.
26. She was pretty.

[1] This class was in the household-arts department, and the members of the class were preparing for cooking and sewing positions. Household-arts classes are smaller than other classes because there is less demand for cooking and sewing teachers than for grade teachers.

Table III lists the characteristics of the poorest teachers submitted by all classes. Class 4, composed of thirty-three students, submitted the largest number of characteristics (193). Last place

TABLE III

CHARACTERISTICS OF THE POOREST TEACHERS

Characteristic	Class 1	Class 2	Class 3	Class 4	Class 5	Class 6	Class 7	Class 8	Total	Per Cent
1. Weak in "getting ideas across" to pupils	17	22	12	42	13	28	19	15	168	19.11
2. Lacks self-control	11	15	6	15	15	26	7	6	101	11.49
3. Partial	20	18	5	16	11	15	4	1	90	10.24
4. Poor disciplinarian	7	9	6	16	4	9	11	5	67	7.62
5. Lacks common sense	15	12	4	10	6	10	7	2	66	7.51
6. Unpleasant voice	11	4	4	19	2	8	3	6	57	6.49
7. Ugly	2	4	3	12	3	9	1	1	35	3.98
8. Unsympathetic	3	4	2	5	4	8	2	2	30	3.41
9. Inhuman	9	3	1	3	3	3	6	2	30	3.41
10. Lacks enthusiasm	4	2	2	5	2	3	6	2	26	2.96
11. Personally untidy	6	4	1	8	2	1	2	1	25	2.85
12. Lacks sense of humor	5	5	0	5	5	3	1	0	24	2.73
13. Faulty scholarship	6	1	1	9	1	1	0	0	19	2.16
14. Careless about records, supplies, and classroom routine	7	2	1	4	1	1	2	1	19	2.16
15. Fails to co-operate	6	1	1	0	3	2	4	1	18	2.05
16. Lacks understanding of children	2	1	3	6	2	2	1	1	18	2.05
17. Poor health	1	2	2	5	0	1	6	0	17	1.93
18. Weak personality	3	1	1	5	0	3	2	1	16	1.82
19. Lacks resourcefulness	0	0	2	0	3	4	1	0	10	1.14
20. Not interested in pupils	1	0	2	3	0	1	2	1	10	1.14
21. Untidy classroom	3	0	0	1	1	0	1	3	9	1.02
22. Tardy	1	2	1	2	0	0	1	0	7	0.80
23. Lacks daily preparation	0	1	1	1	0	0	2	1	6	0.68
24. Insincere	2	0	0	0	3	0	0	1	6	0.68
25. Weak character	0	0	0	0	0	0	3	0	3	0.34
26. Poor command of English	1	0	0	1	0	0	0	0	2	0.23
Total	143	113	61	193	84	138	94	53	879	100.00

is again held by Class 8, the household-arts group, with a total of 53. The total frequency for the twenty-six different characteristics is 879.

The students described a number of dominating traits possessed by their poorest teachers. Some of the statements found on their papers are as follows:

1. She was the best example of a chicken running around with its head off that I ever saw.

2. She was egotistical to the extreme and could mop up flattery like a sponge.

3. He had a voice like a foghorn and was always nagging.

4. Her class looked like a bunch of undertakers.

5. She broke yardsticks over boys and girls if they did not bring in home work and smacked you until your face reddened if you smiled.

6. One minute he would flatter the class, but the next minute he would call us a bunch of boneheads.

7. She taught lessons from a book.

8. If she smiled, we surely would have a thundershower.

9. She knew very little and thought she knew it all.

10. She wore a whalebone collar even in the heat and looked as though she would choke.

11. She made half of the children fall asleep.

12. He listened to recitations in a dreamy, half-conscious way.

13. She treated pupils as mere pieces of machinery.

14. She was a typical old-fashioned school teacher.

15. He was terribly absent-minded.

16. She had an air of being bored with all of us.

17. She loved to beat the pupils.

18. He was very homely.

19. She was never without one or two pets, to whom she explained everything that for the rest of the class would have been answered with "Sit down!" or "Five demerits!"

20. She had rolled sleeves, which got on my nerves.

21. She wore one dress the whole year round.

22. She made us study with our textbooks open while she gossiped with the next-door teacher.

23. He was my worst teacher because he taught algebra.

24. She had a terrible temper. She shouted loudly and threw things at the children.

25. She made enemies rather than friends of the pupils.

26. She told her favorites when they had mistakes on their test papers, allowed them to correct them, and gave them good marks.

27. She had red hair and a terrible temper to match. She washed children's mouths out with soap when they talked in class.

28. He was very dumb.

29. Her whole manner was irksome to me. I never liked her, probably because she gave me the strap once.

30. She was old and ugly.

31. She sent half the class out of the room every day.

32. He spent all day at his desk giving out zeros.

33. You were always sure of your zero every day you came to his room. The way we got around him was to "slip" him presents at least twice a month. It cost me almost a dollar to get through in his room.

34. He filed his nails in class.

35. She wore reams of hideous beads around her neck.
36. She kept preaching about good manners, but she didn't have any herself.
37. She had a wicked eye.
38. She dressed beyond words.
39. He kept me in during the lunch hour.
40. We didn't know what she was talking about.
41. She drank milk in the middle of the day in front of the class.
42. She could not carry a tune, and her voice was awful.
43. He was short, fat, and old.
44. He was dull and uninteresting.
45. He was afraid to crack a smile.
46. She was a regular joy-killer.
47. Her only means of discipline was a yardstick.
48. She yelled at the top of her voice.
49. He was an old-timer in methods.
50. She was too weak physically.
51. Uncleanly appearance.
52. He resorted to corporal punishment too often.
53. She did not seem to understand the modern young.

In a brief but very enlightening article published some years ago, H. E. Kratz made the following statements.

There have been numerous pedagogical works written in which the characteristics of the best, or model, teacher have been set forth but usually from the standpoint of some eminent educator. In describing that model teacher, the eminent educator draws largely from his own experience and clothes his model with his own characteristics, supplemented, it may be, by some traits observed in other successful teachers and rounded out by a few more evolved from his inner consciousness.

Without wishing to decry the helpfulness of such descriptions, it may be well to depart from this customary view and glean some of the characteristics of the best teacher from the standpoint of the pupil. While the judgment of the pupil, no doubt, is immature and liable to error, yet those characteristics which impress the pupils favorably, which lead to a high appreciation on their part, and which establish those relations of sympathy and co-operation so essential in the schoolroom must have some value. In these days of child study, why should not these characteristics be investigated and some ideas gained of the best teacher from the children's standpoint?[1]

The writer believes that Dr. Kratz's point of view is sound. Especially does he believe that the judgment of pupils is of real

[1] H. E. Kratz, "Characteristics of the Best Teacher as Recognized by Children," *Pedagogical Seminary*, III (June, 1896), 413.

practical value when the pupils who are asked to write about the best and the poorest teachers are themselves going to be teachers. The writer thinks that, if no other reason warranted this investigation, at least the study is of some value from this point of view. He thinks that a frank analysis of the results obtained with normal-school students should be helpful to future teachers. With these purposes for the study in mind, some of the results obtained may be analyzed. The following paragraphs, in which reference is made to a number of other articles about teachers, show that the opinions of students in the Philadelphia Normal School are in accord with the results of other studies made of characteristics of teachers and with expert opinion.

1. It is noted that "skilful in 'getting ideas across' to pupils" occupies first place in the list of characteristics of the best teachers. This characteristic was mentioned by 209 students. In the list of characteristics of the poorest teachers, first place is occupied by the opposite, "weak in 'getting ideas across' to pupils." This characteristic has a frequency score of 168. The obvious conclusion is that teaching efficiency may be judged in large measure by the ability of the instructor to transmit knowledge to his pupils. Most persons agree that the individual who succeeds in transmitting his ideas to his pupils is a teacher. The individual who fails to transmit his ideas to his pupils is not a teacher.

2. A survey of the articles and books written by such experts as Anderson, Bird, Palmer, Book, Elliott, Burton, Ruediger, Rugg, Bagley, Knight, Jones, Withers, and Morrison leads to the conclusion that certain traits are indispensable to the teacher. Among these characteristics are the ability to discipline pupils, pleasing personality, enthusiasm, scholarship, health, sympathy, good character, personal neatness, good voice, command of English, and sincerity. These characteristics were frequently mentioned by the students in the Philadelphia Normal School.

3. The issue of the *Spotlight*, the magazine of the Coatesville High School (Coatesville, Pennsylvania), for January 15, 1926, contains a fruitful article entitled "Qualities Pupils Admire in Teachers." The leading qualities mentioned are a sense of humor, the ability to make a subject interesting, and fairness. These qualities

were mentioned with great frequency by the students in the Philadelphia Normal School.

4. When pupils are asked to list the qualities which, in their opinion, make a good teacher, they are expected to mention such qualities as knowledge of a subject, pleasing personality, health, and sympathy. It is surprising, however, that several recent investigations convincingly disclosed the fact that children respect teachers who know how to discipline them. According to the results obtained, children cannot respect teachers whom they are able to "work" easily or who let them do as they please. "Good disciplinarian" occupies fourth place in the list of characteristics of the best teachers. It is little wonder, then, that Dr. Frank Crane sums up the best teacher as "one who makes you want to learn."

5. Although personality has never been acceptably defined, no one would dispute the fact that a pleasing personality is indispensable to the teacher of children. Personality is a characteristic that is always found near the top of any list of teacher characteristics. Sixty-nine students in the Philadelphia Normal School considered "pleasing personality" as a requisite for the best teacher. This characteristic occupies sixth place in the list of characteristics of the best teachers.

6. Not only is it important in a teacher-training institution to impress students with the necessity for developing good teacher characteristics, but it is vital to help them to avoid developing teacher faults. Unfortunately, there are many teachers who are lacking in efficiency because of undesirable traits. Recently a superintendent of rural schools complained about the attitude of the teachers in his county toward their work. In a letter which he sent to each teacher, he called attention to the following defects, which many of them possessed, and urged them to make an effort to improve.

Tardiness
Neglect of classes during the day
Crocheting during school hours
Writing letters in school
Reading letters in school
Poor disciplining of children
Poor preparation of lessons
Failure to attend professional meetings

Lack of community interest

Failure to care properly for fires during school session

Failure to comply with the law requiring the flying of the flag over the school building while school is in session

A survey of these defects naturally leads one to conclude that, since a teacher in a large city system is not expected to be a janitor as well as a teacher, the city teacher should not be criticized on the basis of the last two defects listed. However, some city teachers are guilty of some of the defects listed. To verify this last statement, it is only necessary to examine the list of characteristics of the poorest teachers.

Normal-school students cannot be too often impressed with the fact that they must develop skill in transmitting ideas to pupils, that they must be human in their relations with others, that impartiality in dealing with pupils is essential, that they must be able to control children, and that a sympathetic attitude toward pupils is a necessary requisite in teaching. Moreover, a sense of humor is a tonic for the teacher as well as for the pupil, and a neat personal appearance is an asset to the teacher. Normal-school students must also be made to realize the importance of a co-operative spirit, of self-control, of promptness, and of a knowledge of child psychology.

CONCLUSIONS

1. Normal-school students should be acquainted with the characteristics which are essential to efficiency in teaching.

2. Normal-school students should try to avoid the development of negative teacher characteristics. The list of characteristics of the poorest teachers should be helpful in this respect.

3. The individual who is able to transmit his ideas to his pupils effectively has teaching ability.

4. The individual who is unable to transmit his ideas to his pupils effectively is not a teacher.

5. Children respect a good teacher and have no regard for an inefficient teacher.

6. The best teacher is "one who makes you want to learn."

7. The poorest teacher is one who kills your desire to learn.

ENCOURAGING THE LEISURE-TIME READING OF ELEMENTARY-SCHOOL PUPILS

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The progressive school is vitally interested in the ways in which the boys and girls in the community spend their leisure time. Such a school makes an effort to educate for leisure time by incorporating in its program those activities that are most likely to carry over into the pupils' leisure time without interfering in any way with the regular work of the school.

A most worth-while leisure-time activity is reading. For two years the school system of Richmond, Indiana, has been working on a reading project that has had for its object the encouraging and improving of the leisure-time reading of the boys and girls. This article describes briefly a survey of leisure-time reading in 1926, the classroom procedures which followed and are still in practice, and a second survey made after two years of work.

In October, 1926, all pupils from the low third grade to the high sixth grade were asked whether they were reading books at home. The survey was made by the writer. Neither pupils nor teachers knew that the pupils were to be asked about their reading. The writer went from room to room asking the questions, counting the pupils, and recording the pupils' answers. Each pupil reporting that he was reading a book at home during his leisure time was asked to name the book. Of a total of 1,631 pupils, 694, or 43 per cent, stated that they were reading books at home during their leisure time. There was no indication that the pupils were becoming more interested in leisure-time reading as they progressed through the elementary school, the percentage of pupils reading books at home during their leisure time being approximately the same in the low third grade, the low sixth grade, and the high sixth grade. The greatest percentage, 53 per cent, was found in the high fifth grade.

The pupils who were not reading books during their leisure time were asked why they were not reading. Typical replies are as follows:

I don't have any books.
I don't like to read. I would rather play.
My mother doesn't want me to bring books home.
I have to study my lessons at night. I have no time to read.
I have to work.
I can't read the books I have.

In the reading classes the major aim of which is to encourage leisure-time reading, an attempt has been made to meet the objections to reading which the pupils raised. The following are the helps and activities reported by the teachers as being of the most value in encouraging pupils to read worth-while books in their leisure time at home.

1. A graded list of suitable books that had been found interesting by boys and girls was prepared. The list was made by the writer working in co-operation with the librarian in the children's department of the Richmond Public Library. In this way the list was made to include the books to be found in this department of the library. The list is bound as a booklet, of a convenient size to be slipped into a boy's pocket. Every child from the low third grade to the high sixth grade was given one of the booklets. The pupils carry their booklets with them when they go to the library for books. They are thus not likely to choose totally unsuitable books. If the books they select are not available, the booklet helps them to choose others. The booklet was used, at first, by the teachers to check on the books read by the individual children. It has proved a valuable guide to parents. Many parents have asked for assistance in choosing books to buy for their children at various times in the year. From time to time, it has been necessary to change parts of the book list, and the entire list is to be revised at the end of the present school year.

2. In every class from the low third grade to the high sixth grade one reading period a week is set aside for book reports and discussions. Pupils are given an opportunity to report on books that they have read and enjoyed. They endeavor to make the book reports as interesting as possible so that other children in the group will want to take the books home to read. Lessons on how to make

good book reports are considered a part of the reading program. Teachers give help individually to pupils who find it difficult to make their reports interesting and worth while. The reports are of many types. Some pupils tell the story to an interesting part and then read that part. Others make booklets illustrating the books they have read. Others work in groups and dramatize interesting parts of good books. Two reports may be quoted as typical. They are presented exactly as the children made them. The following report was made by a child in the low third grade.

This book is about Wee Ann. All the way through, it tells funny things about Wee Ann. I think one of the funniest things is the way Wee Ann spent a penny, and I'm going to read you that part.

The following is a report made by a pupil in the low sixth grade.

The name of my book is *Alice in Wonderland.* Alice is a small girl who sees a white rabbit pop down a rabbit hole. She was so surprised that she went down after him. She has many strange adventures, during one of which a baby she is holding turns into a pig. I'm going to read a part of the chapter that tells about the pool of tears.

The class periods devoted to book reports are thoroughly enjoyed by the pupils. Many books change hands on book-report days.

3. Teachers try to give pupils as much assistance as possible in choosing books. Their help is needed by the pupils who find it difficult to read the books listed for their grade. The teacher, knowing the interests of the poor reader, can check the books in the book list that he can read with enjoyment. Some pupils find it difficult to complete a book. The teacher can be of great assistance to such pupils by helping them find short interesting books that they can finish. The pupils who do not like to read offer a serious problem to the teacher. She needs to study the other interests of these pupils, and often, through these other interests, they can be made to realize the satisfaction that comes from reading good books. In the schools where the public library has established branches the teacher goes to the library with her pupils on the days they may draw books. When she cannot accompany the pupils to help them choose books, she discusses suitable books with them before they go. The teachers have found that any time spent in helping pupils choose books wisely is well spent, for every book an uninterested child reads and likes will make him desire another.

4. An attempt is made to provide every room with a few books suitable for the pupils in that room. Teachers may draw books from the library on their own cards to make the reading tables more attractive. While these books are used primarily by pupils in school, they are made to serve the pupils who for some reason cannot get books from the library on their own cards. These few pupils are allowed to take home books from the reading table. This privilege leads many pupils to become so interested in reading that they make a special effort to go to the library for other books.

TABLE I

NUMBER AND PERCENTAGE OF PUPILS IN GRADES III B–VI A, INCLUSIVE, WHO WERE READING BOOKS AT HOME IN OCTOBER, 1926, AND IN OCTOBER, 1928

	GRADES								TOTAL
	III B	III A	IV B	IV A	V B	V A	VI B	VI A	
Number of pupils:									
October, 1926	262	162	247	174	263	170	219	134	1,631
October, 1928	275	189	237	182	259	157	240	159	1,698
Number of pupils reading books at home:									
October, 1926	109	75	81	60	132	91	91	55	694
October, 1928	132	121	147	125	190	118	173	116	1,122
Percentage of pupils reading books at home:									
October, 1926	42	46	33	34	50	53	42	41	43
October, 1928	48	64	62	69	73	75	72	73	66

5. Many teachers find it worth while to use part of the reading period to introduce new books to the pupils. A short talk on a book or the reading of the first few pages often arouses the interest of a pupil who has previously been uninterested.

After a period of two years a second survey was made in October, 1928, to determine the results of the reading project. The method of gathering data was the same as that used in October, 1926. In 1928 many more pupils, 66 per cent as compared with 43 per cent, were reading books at home during their leisure time. Furthermore, the data show a gradual increase from grade to grade in the percentage of pupils reading books at home during their leisure time.

Table I shows the number of pupils in school on the two dates and the number and percentage of pupils reading books at home on the two dates.

DO SCHOOL SYSTEMS NEED A PRINCIPALS' HANDBOOK?

FRANK W. HUBBARD
Research Division, National Education Association

How are new principals acquainted with the minor administrative practices of the local school system? How are all principals assisted in keeping routine clerical and administrative activities at a minimum level of uniformity? To what source can principals turn in an emergency for confirmation of the practices of the local school system?

Present practice.—The replies to letters sent to 425 cities[1] do not show a systematic effort to supply principals with material of the type suggested in the foregoing questions. Many cities issue mimeographed bulletins from time to time, but these are not easily filed nor carefully indexed. Ninety-five cities sent the rule book of the board of education. Forty-five cities wrote letters stating that printed materials are not available. Some typical replies are as follows:

> In reply to your letter, I am sorry to say that we have no special manual setting forth the duties of elementary-school principals.
>
> We have nothing in printed form giving the rules and regulations of the Board of Education nor the duties of elementary-school principals.
>
> In reply to your letter, I regret to say that we do not have any manuals or pamphlets setting forth the duties of elementary-school principals in this city, and we do not have any printed copies of the rules of the Board of Education.
>
> There are no printed rules of instruction for principals of elementary schools. The principals work under the direction of the superintendent.

Apparently, many principals must learn how to function in their school systems through trial and error, or they must confer in person and by telephone with the superintendent, the staff of the central office, or other principals. Does such a procedure produce the best results? Do such requests for information require time which the

[1] Part of the data collected was reported in another form in *The Elementary School Principalship*, pp. 215–27. Seventh Yearbook of the Department of Elementary School Principals of the National Education Association. Washington: Department of Elementary School Principals of the National Education Association, 1928.

principal might devote to important supervisory and administrative activities?

An analysis of city rule books.—The rule books of ninety-five cities were searched for specifications as to the duties of elementary-school principals. Usually references to the principal's work were widely scattered. In a few cases specific duties were classified under such headings as "The Principal" and "Duties of the Elementary-School Principal."

The duties of principals as found in these rule books were classified under five headings: supervisory, administrative, clerical, teaching, and miscellaneous. Some effort was made to eliminate unnecessary duplication, but extensive refinement was not possible. The percentage of duties[1] of each general class is shown in Table I.

TABLE I

PERCENTAGE DISTRIBUTION OF THE DUTIES OF ELEMENTARY-SCHOOL PRINCIPALS IN NINETY-FIVE CITIES OF VARIOUS SIZES AS SHOWN BY RULE BOOKS

	Population of Cities						All Cities
	Less than 5,000	5,001–10,000	10,001–30,000	30,001–65,000	65,001–100,000	More than 100,000	
Supervisory duties	10.0	8.0	11.1	9.2	6.4	12.9	10.2
Administrative duties	67.0	66.0	71.0	58.8	59.3	59.3	61.8
Clerical duties	23.0	26.0	16.1	25.6	32.9	25.3	24.8
Teaching duties	0.0	0.0	1.2	2.4	0.7	0.7	1.1
Miscellaneous duties	0.0	0.0	0.6	4.0	0.7	1.8	2.1
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Eighty-six and six-tenths per cent of the specifications in the rule books have to do with clerical and administrative duties. Only 10.2 per cent of the statements relate to supervisory work. Is there any possibility that the emphasis in these rule books influences the amount of time principals devote to supervision?

Weaknesses of rule books.—If such city rule books as have been analyzed meet the needs of principals, other cities may well imitate current practice. In the course of the investigation, however, it was

[1] Compare with study by J. Boggs, "School Board Regulations concerning the Elementary-School Principal," *Elementary School Journal*, XX (June, 1920), 730–42.

obvious that typical rule books have two weaknesses: (1) They contain faulty specifications, and (2) they omit much useful information.

The most obvious faults of board rules affecting the principal's work are (1) emphasis on clerical and administrative functions, often submerging the more professional duties; (2) disagreement with progressive educational theory and practice, particularly with regard to the relation between principals and supervisors; (3) extreme rigidity in the prescription of detailed duties; (4) lack of complete co-ordination with state regulations; and (5) vagueness where clear distinctions are important.

Materials often omitted from local rule books are (1) digests of state laws affecting elementary-school procedures, (2) digests of the rules of the state board of education, (3) regulations of the local principals' association, and (4) generally accepted or traditional practices of the local schools.

A publication which eliminated these faults would cease to be a mere rule book. It would become a complete and carefully indexed handbook. Would the availability of information in such handy form assist principals in finding more time for supervision?

Preparing a principals' manual.—If it is admitted that a complete handbook is desirable, who is to prepare it? This is a question involving not only time but qualifications for the task.

The local principals' club may well undertake the work as a year's project. The members of this group are keenly aware of the information that is needed in handy form. They know the inarticulations between the principals and the supervisors, directors of instruction, nurses, research workers, and other school officers. Principals' clubs are interested in discovering group projects which will produce large returns in professional improvement.

Could any group fail to profit professionally from the development of basic principles in handling common problems?

1. What percentage of his time should a principal give to supervision?
2. What are the essential supervisory techniques to be emphasized locally?
3. How should the local teacher-rating scale be used?
4. Can the pupil-marking system be made more objective and reliable?
5. How can supervisors assist principals in supervision?

The foregoing questions are indicative of the type of problems which need investigation. Principals' associations will be interested in the beginnings which have been made in such cities as Seattle, Oakland, Los Angeles, and St. Louis. In some cases co-operative study among cities might be profitable. Can local groups afford to overlook the opportunity to define more clearly the responsibilities of the principal?

SELECTED REFERENCES

1. Boggs, J. "School Board Regulations concerning the Elementary-School Principal," *Elementary School Journal*, XX (June, 1920), 730–42.
A study of board rules in thirty cities. Quotes examples of rules.

2. Lane, Robert Hill. *A Work Book for Principals and Supervisors in Elementary Schools*. School Publication No. 151. Los Angeles, California: City School District, 1927 (revised).
Brief statements of administrative and supervisory procedures.

3. *The Elementary School Principalship*, pp. 215–27. Seventh Yearbook of the Department of Elementary School Principals of the National Education Association. Washington: Department of Elementary School Principals of the National Education Association, 1928.
Detailed discussion of typical rule books. Indication of progressive tendencies.

4. *Organization and Administration of a Program of Supervision by the Principal*. Superintendent's Bulletin, Improvement of Instruction Series, No. 2. Oakland, California: Oakland Public Schools, 1927.
An outline of procedures as compiled by a principals' committee.

5. "The Principal Studies His Job," *Research Bulletin of the National Education Association*, VI (March, 1928), 122–27.
Discusses possibilities and contents of handbooks developed by local principals' clubs.

6. *Principal's Hand Book*. Seattle, Washington: Seattle Public Schools, 1919.
Useful information on supervision and administration.

7. "The Supervision of Classroom Instruction," *Public School Messenger*, XXIV (April 15, 1927), XXV (September 1, 1927, and September 2, 1927). St. Louis, Missouri: St. Louis Public Schools.
Statements of principles and practices in supervision by general and special supervisors.

THE SPECIFIC TYPE OF PROBLEM IN ARITHMETIC VERSUS THE GENERAL TYPE OF PROBLEM

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To what extent does the solving of a specific problem in arithmetic develop general problem-solving ability; that is, to what extent does the solving of a certain specific problem develop ability which will function in the solution of similar problems? In other words, to what extent are pupils, after solving a certain specific problem, able to formulate a general conception whereby the principle involved in solving the problem will become generalized and thought of as applying to all problems of a similar nature?

Do problems that contain numbers and thereby become specific and problems that contain no numbers but are of a general nature have different effects on the pupil? Are problems containing numbers easier or more difficult than problems which do not contain numbers but are more general in type and involve general principles?

Many teachers think that, if they give a sufficient number of specific problems, the pupils will draw conclusions from the solving of these problems and make generalizations. On the other hand, many teachers think that pupils should be given practice in solving problems of a general nature; they think that it is not enough to give practice on specific problems, that pupils should have some practice in solving problems of a general nature if they are to be successful in thinking in general terms and in applying arithmetical principles.

The writer attempted to devise a test to determine whether problems with numbers or problems without numbers are more readily understood by pupils. Two lists of problems were prepared. List A contained problems of a specific nature, problems with definite values expressed in numbers. List B contained problems of a general nature, problems with no definitely expressed values. Three of the problems from each list follow.

LIST A	LIST B
1. The width of a room is 10 feet, and its length is 15 feet. Find its perimeter.	1. If you know the length and the width of a room, how can you find the perimeter?
2. John's marks this month are as follows: arithmetic, 90; geography, 86; spelling, 100; and reading, 84. What is his average mark for the month?	2. If you know your different marks for the month in the different subjects, how can you find your average mark for the month?
3. Multiply 6.78 by .176 and point off correctly in the product.	3. If you know the number of decimal places in each of two numbers, how can you find the number of decimal places in their product?

Each list contained fifteen problems. The principles for solving the problems in List A were exactly the same as those for solving the problems in List B. List B contained all the problems in List A stated in general terms with the definite quantities or numbers omitted. These lists of problems were given to seventy eighth-grade pupils and sixty seventh-grade pupils. In one half of the cases List A was given first followed by List B, and in the other half of the cases the order was reversed. When the lists were given, the pupils were asked whether they thought it is easier to solve a problem or to tell another person how to solve it. The majority of pupils in each case seemed to think that it is easier to tell another person how to solve a problem than to solve it. One half of the pupils were then instructed to tell how to solve the problems in List B. List A was then given with instructions to solve the problems. As has been stated, the other half of the pupils were told to solve the problems in List A and then to tell how to solve the problems in List B.

Table I shows the average number of problems in each list solved by the pupils in each grade. The correlation between the results for List A and the results for List B is $.52 \pm .06$.

The pupils in all the classes made higher scores on the list of problems containing specific, definite numbers. The differences between the number of problems in the two lists solved per pupil are marked and rather consistent, ranging from 1.9 problems per pupil in Class W to 3.5 problems per pupil in Class X. The average difference for all classes is 2.5 problems per pupil. Of a total of 130

pupils, only 5 made higher scores on List B. In all the remaining cases, 125 in number, the pupils made higher scores on List A.

CONCLUSIONS

1. The fact that a pupil can solve specific problems does not necessarily mean that the pupil has formed a general conception which he will apply to all similar problems. In other words, the fact that a pupil can find the perimeter of a room if he is given the length and the width of the room does not necessarily mean that he is able to apply the principle of the problem and tell how to find the perimeter of a room when the length and the width of the room are given.

TABLE I

AVERAGE NUMBER OF PROBLEMS IN EACH LIST SOLVED BY EACH CLASS

	List A	List B	Difference
Grade VIII:			
Class W.....	12.1	10.2	1.9
Class X.....	12.4	8.9	3.5
Grade VII:			
Class Y.....	10.7	8.6	2.1
Class Z.....	9.5	7.0	2.5
Average.....	11.2	8.7	2.5

2. Problems with definitely expressed numerical quantities seem to be more readily understood and solved than problems of a general nature involving general principles. Whether this is because of more practice and drill on the numerical type of problem is an open question.

3. The correlation between the results in the case of the two lists does not seem to be very high when one considers the fact that the problems are the same in both lists so far as principles in solving are concerned.

4. Perhaps a suggestion to teachers of arithmetic in keeping with the results obtained might be that some drill in problems of a general nature be given or that frequent applications of the principles involved in the specific cases be made.

THE READING SPAN

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The term "reading span" as here used means the number of words that can be grasped and immediately repeated after a three-second exposure of reading material. The reading span is therefore different from the eye span, which is the amount of material that can be grasped in one fixation of the eyes.

Reading is the process of getting meaning from printed or written words as they appear on the page. The first step in this process is the *recognition* of the words. The reading-span experiment[1] here described provides a means of measuring a pupil's ability or efficiency at word recognition.

The purpose of the study was to obtain age, grade, and sex norms so that the experiment could be used in measuring one of the factors which contribute to success in reading.

The Whipple disc tachistoscope, set for a three-second exposure, was used. The material consisted of a series of sentences from one word to twenty words in length. These sentences were prepared with due regard to the children's vocabulary. In every case the words are the most common words in the child's reading vocabulary. An adjustable head rest and a piano stool were used.

The sentences used are as follows:

1. run
2. brown rabbit
3. see the pig
4. Color a cat yellow.
5. run and get a girl.
6. the boy cut out a hen.
7. the girl can not get the cat.
8. the boy will run to the yellow hen.
9. You can not see the big, brown rat run.

[1] The apparatus and material for the experiment can be secured from the C. H. Stoelting Company, Chicago.

10. The boy said he saw a big, white rabbit jump.
11. See the girl color a black pig and a brown hen.
12. Color a pig, a hen and a rabbit the way you choose.
13. A bird is in the tree
and it will eat the red apple.
14. The little boy has a big dog
and the girl has a white kitten.
15. There was a little boy named Bob
who had a big, black dog called Jack.
16. In winter boys and girls like to skate;
but in the summer they like to swim.
17. One day some boys and girls went to the woods
and had a very fine time playing.
18. The day at school seemed very long and the lessons hard;
that is why we got so tired.
19. Boys and girls when they are young never know
what things will come to them when they are old.
20. The road was very steep and rough with stones,
but the brave boy climbed all the way to the top.

The pupil was seated on the piano stool, which was adjusted to his height; then the head rest was adjusted. The working of the apparatus was explained to the pupil. He was told that he would see a sentence for a very short time and was to read all he could in that time and that, as soon as the sentence was covered up, he was to repeat all he could remember of what he had read. A sample sentence was shown in order to be certain that the subject understood what he was to do. Then he was shown a sentence very easy for him. If the child was shown a sentence too long for him, one much easier was shown. A sentence was exposed but once. The length of the sentences exposed was increased by one word each time until the child's limit was reached. In every case the experiment was continued until it was clear that the child's limit had been reached, sentences containing two or three words beyond the limit usually being exposed. The pupil's reading span was recorded as the number of words in the longest sentence completely reproduced. Actual verbal reproduction was required. In some cases the pupil failed to reproduce a sentence and then reproduced a longer one. His record showed the longest sentence regardless of the fact that he had failed to reproduce a shorter one.

The experiments were, of course, individual. Every precaution was taken to insure scientific exactness. The apparatus was set up in a small room devoted exclusively to the investigation. While an experiment was in progress, no pupil other than the subject was allowed in the room. The subjects included all the pupils in three Detroit elementary schools, 3,431 pupils in all. The three schools are in different localities and represent every social and racial level. The records may therefore be considered fairly representative of a metropolitan population.

Table I shows the number of boys and girls at each age level. Table II shows the norms for boys and girls by grades; and Table III, by ages. Table IV shows the norms by grades for three intelligence levels.

The tables show a gradual increase in the reading span up to the eighth grade and up to the age of thirteen. The girls are clearly superior to the boys. From six to thirteen years of age the girls excel the boys. At the age of fourteen the boys are superior to the girls, and in the case of the few children fifteen years old[1] the boys are much superior. The reason is clear. Many of the bright girls fourteen years old or older have passed on to higher grades.

The grade norms shown in Table II are based on a sufficiently large number of cases to be adequate and reliable. So also are the age norms shown in Table III if they are applied only to pupils in the elementary school. For the ages twelve, thirteen, and fourteen, the norms given are too low for an unselected school population because many children thirteen and fourteen years old and a few children twelve years old are in the high school and are not represented in the averages.

To what age the reading span continues to develop is an interesting and practical question. The indications are that it continues to increase to maturity. The same experiment was tried with one hundred Sophomore girls in the Detroit Teachers College. Their average age was 18.5 years. Their average reading span was 15.6. If the record of these girls is compared with the record of the children in the X group shown in Table IV, considerable development of the reading span after the eighth grade is indicated.

[1] Not included in the tables.

TABLE I

NUMBER OF PUPILS STUDIED

Age	Number of Boys	Number of Girls	Total
6	186	188	374
7	242	231	473
8	266	264	530
9	250	269	519
10	238	260	498
11	255	242	497
12	143	141	284
13	88	90	178
14	48	30	78
Total	1,716	1,715	3,431

TABLE II

AVERAGE READING SPAN OF BOYS AND GIRLS IN EACH GRADE

Grade	Boys	Girls
I	3.30	3.78
II	5.09	5.40
III	5.92	6.78
IV	7.62	8.33
V	9.30	9.82
VI	9.97	10.56
VII	12.97	13.35
VIII	13.00	13.60

TABLE III

AVERAGE READING SPAN OF BOYS AND GIRLS AT EACH AGE LEVEL AND PROBABLE ERROR

Age	Boys		Girls	
	Reading Span	Probable Error	Reading Span	Probable Error
6	3.0	1.21	3.2	1.39
7	4.2	1.49	4.8	1.42
8	5.7	1.87	6.6	1.72
9	6.9	2.08	7.9	1.77
10	8.7	2.27	9.6	2.18
11	9.2	2.25	10.3	2.14
12	10.2	2.31	10.8	2.78
13	10.2	2.29	11.4	2.57
14	10.9	2.54	10.7	2.54

There are many factors that contribute to success in reading. The reading span is but one of these factors. It may be positively related to some of the factors and quite independent of others. One would not expect, therefore, to find a high correlation between the reading span and the reading marks of the children. To obtain some

TABLE IV

AVERAGE READING SPAN OF X, Y, AND Z INTELLIGENCE GROUPS IN EACH GRADE*

Grade	X Group	Y Group	Z Group
I	4.5	3.3	2.9
II	6.1	4.8	3.7
III	8.3	6.5	4.6
IV	9.7	8.0	7.4
V	12.0	8.3	8.1
VI	13.4	9.1	8.6
VII	13.5	12.6	11.0
VIII	13.8	13.2	11.5

* X represents the highest intelligence group; Y, the medium; and Z, the lowest.

data on this matter, the scores made by approximately 250 fifth- and sixth-grade pupils in the regular Detroit reading examinations and recorded on the pupils' record cards were studied. These scores were based on both speed and comprehension. The pupils were arranged in groups from 1, the highest, to 5, the lowest, on the basis

TABLE V

AVERAGE READING SPAN OF PUPILS IN EACH OF FIVE GROUPS BASED ON SUCCESS IN READING

Group	Average Reading Span
1	12.4
2	11.3
3	10.1
4	8.5
5	7.3

of their scores. The average reading span was highest for the pupils in Group 1 and lowest for the pupils in Group 5, as shown in Table V. It is clear that the groups showing higher efficiency in reading have greater average reading spans, but within a reading group there is a wide range of reading spans. Owing to the presence or absence of

other factors or to the relative effect of other factors, a pupil having a medium reading span may be found in any of the five reading groups.

It is clear from a study of Table IV that the reading span is related to intelligence. The pupils were rated in intelligence by the Psychological Clinic of the Detroit public schools by means of a group test. It is quite likely that the score which a pupil makes in such a test depends in some measure on his ability to recognize and interpret printed symbols, and this is the ability which the reading-span experiment directly measures.

The time is near at hand when every large school system will have a completely equipped reading clinic. Every pupil not showing progress in reading will be taken to this clinic, where an expert will determine the cause or causes of the reading deficiency by means of a searching experimental study and prescribe the proper treatment. The reading span will be one of the factors to be determined in such a study.

Reading is the most important study in the elementary school. Ability to read is fundamental in nearly all the other school subjects and is of great importance throughout life. Therefore, teaching children to read is one of the school's greatest tasks. It should be done in the most efficient and expeditious manner in the light of everything that science can contribute.

REPORT CARDS OF THE ROYAL OAK PUBLIC SCHOOLS

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The report cards now in use in the public schools of Royal Oak, Michigan, are the result of two years of research and experimentation on the part of a committee of teachers and principals co-operating with the superintendent. The cards which had been in use were of the old form and furnished nothing but the barest facts. In formulating the new cards, the committee set up the following objectives. (1) In order to be of real value, the cards should not only give a general idea of the type of work being done by the children but also show the points considered in the determination of the general marks. (2) Since the development of high ideals in citizenship is one of the chief functions of the school, the cards should analyze the habits and ideals on which high qualities of citizenship depend. (3) The construction of the cards should be such that children as well as parents can easily understand them.

Three cards were prepared—one for the kindergarten, one for Grades I and II, and one for Grades III–VI, inclusive. As the schools in Royal Oak are organized on the platoon plan, the cards are designed for use in schools of this type. With slight modifications, however, they can be used in schools of any plan of organization.

In formulating the kindergarten card, the committee decided that the chief function of the kindergarten is to establish desirable habits and attitudes. Keeping this in mind, the members of the committee agreed on four types of habits and attitudes, namely, health habits, personal habits, social and moral habits, and work and play habits. Each of these types was analyzed, and the factors necessary to produce them were set down.

The cards are marked three times a semester. During the first

six weeks each child is carefully studied, and his undesirable habits are checked. The second marking shows the progress made by the child. The third marking is for promotion or non-promotion.

The cards for Grades I and II and Grades III–VI are divided into three parts, namely, home-room subjects, special subjects, and habits and attitudes desirable for good citizenship. Each division of each part is subdivided into the factors which should be considered in determining a mark for the particular subject. Thus, the teacher is required to make a rather careful study of each child in each subject before a mark is given. A check after any factor indicates unsatisfactory progress. This points out to the child the thing he must improve if he wishes to raise his mark. It also informs both child and parent as to the factors that are being considered and the objectives that have been set up for each subject. The marks used are as follows: A, excellent; B, good; C, average; and D, poor, just passing.

When the cards were first issued, they were not favorably received by all the parents, but, as the parents came to understand the cards, their opposition ceased. At the present time there is no desire to return to the old type of card.

The items on which reports are made for the different grades are as follows:

KINDERGARTEN

Health habits:

1. Sits, stands, and walks correctly
2. Keeps hands and materials away from mouth
3. Uses handkerchief properly
4. Keeps hands, face, teeth clean
5. Observes rest periods
6. Tries to obey all health rules

Personal habits:

1. Puts materials away properly
2. Does not waste materials
3. Comes to school on time
4. Responds to signals promptly
5. Puts on own wraps
6. Takes care of own wraps

Social and moral habits:

1. Obeys rules made by school
2. Respects school property
3. Uses quiet tones in talking
4. Listens while others are talking
5. Co-operates in a group
6. Considers others, is thoughtful and courteous
7. Is willing to share with others
8. Shows a happy disposition
9. Is friendly toward other children
10. Is always willing to do his part
11. Shows interest in work and play

Work and play habits:

1. Uses time to good advantage
2. Is able to finish a simple task
3. Shows self-control
4. Shows initiative
5. Is able to follow simple directions
6. Is able to plan own work
7. Is able to judge results and to draw conclusions
8. Is able to express himself through—
   a) Music
   b) Games
   c) Drawing and handwork
   d) Dramatizations
   e) Use of equipment
9. Enjoys nature as shown by interest in excursions
10. Is able to listen to short stories
11. Is able to tell a short story
12. Talks freely and plainly
13. Appreciates good picture books as shown by the use of them, care of them, understanding of them, and interest in them
14. Shows ability in leadership

GRADES I AND II

Home-room subjects:

Reading:

1. Likes to read
2. Understands what he reads
3. Gives meaning to others when he reads
4. Works out new words independently

Numbers:

1. Knows what numbers mean
2. Can work out simple problems in addition and subtraction
3. Reasons in working out problems
4. Shows accuracy
5. Shows satisfactory rate
6. Can write figures neatly

Spelling and writing:

1. Tries to write well
2. Writes plainly
3. Keeps work neat
4. Knows how to study words
5. Spells satisfactorily after study

Special subjects:

Music:

1. Enjoys and appreciates good music
2. Does best he can in music
3. Is able to sing simple songs
4. Controls voice—soft quality

Drawing and handwork:

1. Is attentive when teacher gives instructions
2. Tries to follow directions
3. Uses materials to good advantage
4. Expresses ideas through drawing or handwork
5. Can work independently
6. Works well with others of the group

Story-telling and dramatization:

1. Listens while others are talking or entertaining
2. Makes helpful suggestions and contributions
3. Plays his part well in little plays
4. Can tell a short story well

Games, plays, and rhythms:

1. Plays fair
2. Enters into all games and plays
3. Has good sense of rhythm
4. Shows growth in muscular control

Health:

1. Observes good health habits
2. Co-operates in health activities

Nature-study:

1. Interested in nature
2. Brings in or tells of interesting objects
3. Shows interest in excursions and experiments
4. Draws conclusions from experiences

Language:

1. Uses good English
2. Can compose simple sentences on given subjects
3. Speaks freely
4. Speaks distinctly
5. Is a good listener

Habits and attitudes desirable for good citizenship:

Personal habits:

1. Maintains good posture in sitting, standing, and walking
2. Keeps hands, nails, and face clean and personal appearance as neat as possible
3. Keeps hands and materials away from mouth
4. Takes proper care of school properties
5. Is in the right place at the right time equipped for work
6. Takes care of wraps
7. Keeps desk in good order

Social habits:

1. Refrains from unnecessary talking in the classroom and halls
2. Helps classes pass quickly and quietly from room to room
3. Listens politely when someone is talking
4. Does not disturb others
5. Practices good manners in speech and conduct
6. Does not annoy others in going to and from school

Work and study habits:

1. Uses time to good advantage
2. Finishes work promptly
3. Pays careful attention to teacher when directions are given
4. Volunteers in all school activities
5. Does best he can to improve his work

GRADES III–VI, INCLUSIVE

Home-room subjects:

Reading:

1. Understands materials read
2. Has good reading habits

3. Shows growth in enjoyment of reading
4. Gives meaning to others when he reads

Arithmetic:

1. Knows the fundamental operations
   a) Addition
   b) Subtraction
   c) Multiplication
   d) Division
2. Works with satisfactory rate and accuracy
3. Reasons well in working problems

Handwriting:

1. Writes plainly
2. Directs own work
3. Judges own work
4. Does written work well in all subjects

Spelling:

1. Knows how to study words
2. Spells satisfactorily as the result of study
3. Tries to overcome spelling difficulties
4. Spells well in other subjects

Language:

1. Speaks correct English
2. Writes correct English
3. Expresses own ideas well

History:

1. Enjoys reading history stories
2. Does independent reading
3. Knows important history facts assigned to his grade
4. Tries to understand the present by studying the past

Special subjects:

Music:

1. Enjoys and appreciates good music
2. Controls voice—soft quality
3. Does best he can to learn musical symbols
4. Enjoys singing with groups

Drawing:

1. Is attentive when teacher gives instructions
2. Tries to follow directions
3. Uses materials to good advantage

4. Expresses ideas through drawing
5. Can work independently
6. Holds to standards of good workmanship

Library:

1. Enjoys good books and stories
2. Reads books with a purpose
3. Uses leisure time in reading

Auditorium:

1. Gives help willingly when needed
2. Listens while others are talking or entertaining
3. Makes helpful suggestions and contributions
4. Enjoys dramatization or dramatics

Physical education:

1. Shows good sportsmanship
2. Is prompt in following directions
3. Tries hard to improve
4. Has good sense of rhythm
5. Possesses muscular co-ordination

Health education:

1. Observes good health habits
2. Co-operates in health activities

Geography:

1. Is learning the geography facts
2. Knows how to use maps and reference material
3. Is developing sympathy for people who live in other lands
4. Understands the effect of the geography of a country on the life of its people

Habits and attitudes desirable for good citizenship:

Same as for Grades I and II

A STUDY OF THE DEVELOPMENT OF THE RATE OF ARTICULATION

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Considerable study has been made of the development of language abilities, especially of the way in which the child first learns to talk, and of the development of the many abilities and habits connected with reading. Vocal articulation, an ability necessary to the use of language in all forms of oral expression and communication, has, however, received very little consideration and study. The writer therefore attempted an investigation of the vocal articulation of pupils of various school ages to determine whether the rate of articulation develops after children enter school and, if so, to study the nature of the development and some of the factors which affect it.

The investigation determined the rate of articulation of pupils of various ages. Six articulation tests were administered to two hundred pupils in Grades I–XII in the public schools of Stronghurst, Illinois. The tests used were (1) a number test, which consisted of the rapid repetition of the number names from "one" to "six," inclusive; (2) an alphabet test, which consisted of the rapid repetition of the letters of the alphabet from *a* to *g*, inclusive; (3) a word test, which consisted of the rapid repetition of the word "animal"; (4) a nursery-rhyme test, which consisted of the rapid repetition of the rhyme "Jack be nimble, Jack be quick, Jack jump over the candlestick"; (5) an alliteration test, which consisted of the rapid repetition of the sentence "Many men make many minds"; and (6) a sentence test, which consisted of the rapid repetition of the sentence "The big fox ran from the dog."

The pupils were tested individually and were given scores on each test, the score being the actual number of sounds articulated in fifteen seconds. The average rate of articulation for each grade was then calculated. The averages are presented in Table I.

Examination of Table I reveals some significant facts regarding the vocal articulation of pupils. In the first place, the data show that pupils develop in articulation ability during the entire period of public-school life. The first grade made the lowest average score in each test. With but few exceptions, each successive grade averages higher in rate of articulation than does the preceding grade, the twelfth grade exhibiting the highest rate in every test. These facts indicate that pupils have not mastered all the skills connected with articulation when they enter school. Prior to the beginning of their

TABLE I

AVERAGE SCORES MADE BY PUPILS IN THE VARIOUS GRADES ON SIX ARTICULATION TESTS

Grade	Number Test	Alphabet Test	Word Test	Nursery-Rhyme Test	Alliteration Test	Sentence Test
I	51.4	49.0	58.5	60.7	42.2	42.5
II	62.1	59.4	65.8	68.9	48.4	56.3
III	70.1	70.2	70.3	79.1	58.3	60.4
IV	72.8	67.6	73.2	73.3	60.6	60.3
V	73.2	75.9	77.1	78.2	60.6	65.6
VI	78.8	79.9	81.8	81.1	63.2	65.3
VII	73.7	80.7	91.1	80.2	67.1	70.8
VIII	81.6	82.4	93.0	82.4	72.2	71.5
IX	78.1	81.9	88.0	81.9	71.3	71.4
X	81.4	86.0	93.0	83.3	75.6	74.3
XI	80.1	89.1	91.6	83.2	72.9	74.2
XII	83.5	90.2	99.2	85.4	78.3	78.3

school life they acquire the talking adaptation; that is, they learn to use the organs of speech in articulating sounds, but skilful use of these organs remains to be developed.

The data in Table I show also the nature of the development of the rate of articulation. The increase in rate of the second grade over the first grade is greater than similar increases between other grades in two tests. When all the tests are considered, the greatest and most sudden increase in rate of articulation is found between these two grades. The third grade likewise averages considerably higher in rate of articulation than does the second grade. The third grade shows increases over the second grade in the alphabet, nursery-rhyme, and alliteration tests which are greater than the increases between any other grades in these tests, but the increase when all six tests are considered, while comparatively large, is somewhat less

than the increase between the first and second grades. The fourth grade scored lower than did the third grade in three tests and only slightly higher in the other three; it shows a decrease in rate of articulation rather than an increase when all test scores are taken into account. From the fourth grade on the increases in rate are gradual and general with slight variations between tests except in the case of the ninth grade, which shows a decrease in rate in comparison with the eighth grade.

The data of the investigation therefore indicate that, during the first three years of their school life, pupils develop rapidly in the ability to articulate sounds, the greatest development occurring during the early part of this period. The gains made decrease from year to year until the fourth grade is reached, when the development is arrested. From the fourth grade to the eighth grade the ability develops gradually, but development is again arrested in the ninth grade, after which the ability develops gradually until the end of the secondary-school period.

The rapid development in rate of articulation during the early years may be accounted for by the socializing influences of the school. When the child enters school for the first time, he is introduced to a wider social environment, in which impulses to excel are developed through competition with other children of the same age. Greater speech demands are made upon him, and greater fluency is found to be desirable. Increased use of the vocal organs brings about greater facility in articulation.

An explanation may be offered for the lack of increase in rate of articulation in the case of the fourth and ninth grades. In the fourth grade the center of the pupil's interest is shifted. In this grade the pupil begins to acquire more interest in the content of the materials of instruction as a result of the changed character of the work, the different emphasis that is placed on results, and his developing personality. It has been shown by investigations in the field of reading that at about this time the rate of silent reading begins to exceed the rate of oral reading. The pupil is no longer merely acquiring the tools of learning but is gaining new ideas and experiences, which absorb his interest and withdraw his attention from the acquisition of skill in articulation.

Likewise, the pupil entering the ninth grade—that is, the first year of the high school—is ushered into an environment that is totally different from that which surrounded him in the elementary school. New interests and changed conditions absorb his attention and consume his energy to such an extent that the development of skill in articulation is crowded into the background, and no further progress is made until after the pupil becomes adjusted to the new experiences to which he is subjected.

The development of skill in articulation thus follows the general rule of motor learning. The rate of learning is rapid in the beginning but is retarded as the individual reaches a state of satisfaction or becomes interested in other things. Articulation is a motor ability, and it is only reasonable to suppose that factors which affect other motor abilities also affect the rate of articulation. In fact, a significant correlation was found between rate of tapping and rate of articulation in the case of the pupils studied, the Pearson coefficient being .732, with a probable error of .012.

It is generally recognized that during the early years of school training the rate of oral reading develops rapidly. Such development has usually been attributed to the development of wider recognition spans and consequent reduction in the number of fixations and to the development of better association of sounds and symbols—in other words, to greater facility in the use of the printed page. It may be that the rapid development of the ability to articulate sounds during these early years also contributes to the development of the rate of oral reading.

Two factors other than age which were found to influence the rate at which pupils articulate are sex and intelligence. Table II shows the average rates of articulation of the boys and the girls.

It will be noted that the girls articulated more rapidly and developed in articulation ability more rapidly than did the boys until some time between twelve and thirteen years of age. From this point on throughout the different age groups, although there was rather irregular development in the rate of articulation, the boys generally articulated more rapidly and developed in articulation ability faster than did the girls, reaching a considerably higher level of such ability in the highest age group. Therefore, while the girls de-

veloped earlier in rate of articulation, the boys experienced a greater development by the close of the public-school period. This earlier development of articulation ability on the part of the girls is interesting because it coincides with the known facts of sex development.

In order to show the relation of intelligence to the rate at which pupils articulate, the pupils were classified in chronological-age groups and the articulation scores and the I.Q.'s of the pupils making the highest and the lowest articulation scores in each group

TABLE II

AVERAGE RATES OF ARTICULATION OF THE BOYS AND THE GIRLS DISTRIBUTED IN EQUAL AGE GROUPS

Age in Months	Boys	Girls
72–83	52.5	52.8
84–95	53.7	61.0
96–107	64.7	71.9
108–119	68.6	70.3
120–131	69.2	71.5
132–143	70.9	79.3
144–155	80.8	76.3
156–167	78.1	75.9
168–179	79.0	80.1
180–191	79.2	82.3
192–203	83.9	82.0
204–215	82.9	85.2
216–227	83.3	82.1
228–239	93.8	80.1

tabulated, as shown in Table III. The data in this table show that in ten of the fourteen age groups into which the pupils were divided the highest articulation score was made by a pupil whose I.Q. exceeds the I.Q. of the pupil making the lowest articulation score. In two cases the I.Q. of the pupil making the highest score is equal to the I.Q. of the pupil making the lowest score. In two cases the I.Q. of the pupil making the highest score is lower than the I.Q. of the pupil making the lowest score. Even though these exceptions occur, the data show a definite tendency toward rapid articulation by pupils of high I.Q. and slow articulation by pupils of low I.Q.

The investigation shows that the pupils developed in ability to articulate sounds after they entered school. The development was greatest during the first three years. The fourth and the ninth

grades showed no development in rate of articulation, but all other grades showed increases over the preceding grades. Three factors

TABLE III

AVERAGE RATES OF ARTICULATION AND I.Q.'S OF PUPILS MAKING THE HIGHEST AND LOWEST ARTICULATION SCORES IN THE VARIOUS CHRONOLOGICAL-AGE GROUPS

Pupil	Age Group (Months)	Average Rate of Articulation	I.Q.
21	72– 83	67.5	124
3	72– 83	42.2	96
33	84– 95	68.5	125
19	84– 95	40.7	76
34	96–107	74.5	128
40	96–107	55.8	104
49	108–119	76.5	120
39	108–119	63.5	84
55	120–131	79.7	116
50	120–131	62.8	103
70	132–143	83.7	129
71	132–143	61.7	121
84	144–155	98.2	129
85	144–155	69.2	130
100	156–167	88.5	119
103	156–167	65.3	105
122	168–179	91.3	111
120	168–179	68.2	111
142	180–191	92.0	104
141	180–191	66.5	104
180	192–203	97.7	124
167	192–203	69.0	107
182	204–215	98.5	112
173	204–215	76.5	103
193	216–227	95.2	112
176	216–227	75.2	86
179	228–239	98.3	105
198	228–239	75.3	108

which were found to bear a close relation to rate of articulation are age, sex, and intelligence.

CONSTRUCTING THE ELEMENTARY-SCIENCE COURSE IN CLEVELAND

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Need for a course in elementary science.—For several years extensive work in nature-study and gardening was carried on in the Cleveland schools by special teachers in connection with the garden department. After this plan was abandoned, a few teachers who were much interested in science apparently did a little work in that subject, but there was no course of study, and no time was allowed for the work. Teachers were, of course, permitted to discuss any questions which children might ask if they cared to do so. Organized plans of procedure and sequences were developed in other subjects, but there was no organized plan for science in the elementary school.

The courses in science for the elementary school were not well balanced. The nature-study courses contained subject matter principally from the field of biology. Gardening and agriculture represented the subject matter of the other science courses. The whole field of science was not represented in the science courses of study. In most schools the children were deprived of the scientific materials which should be woven into their daily lives.

The committee appointed to organize a course in science for the elementary schools therefore decided to include objectives from the whole field of science—nature-study, camping, safety education, physical science, health, etc. The name "elementary science" was given to the course because it includes scientific principles and generalizations.

Difficult problems confronting teachers of science.—What is the place of elementary science in the program of studies? Should science be taught in connection with reading, language, and other subjects, or should a definite time be assigned to science in the daily program? If it is not being taught, why should the children not have an opportunity to gain experiences from the materials about them?

Can the regular teacher carry on the work, or should special teachers be assigned for elementary science? These and other questions confronted the committee at the outset.

The committee and its functions.—The central committee appointed by the assistant superintendent in charge of elementary schools consisted of an elementary-school principal, a supervisory assistant, two classroom teachers, and one member of the staff of the science department of the School of Education,[1] Western Reserve University. Working with the central committee were committees consisting of three teachers from each grade and educational experts and members of the superintendent's staff. Two courses of procedure were considered before the committee began its work. One was to employ one or more persons to prepare the course in science to meet the needs of the elementary schools in Cleveland, and the other was to find the teachers in the system who, because of their interest and training, were qualified to serve on the committee as curriculum experts. The latter course was decided upon.

The only tradition to overcome was that dealing with nature-study, which did not really exist although most teachers had a faint idea of what this subject had been in the past and what it ought to be in the future.

To determine the objectives of science in terms of the interests and needs of children in the kindergarten and in Grades I–VI, inclusive, and to list the activities adapted to each of the grades in order to attain these objectives constituted the task of the committee. The committee realized the immensity of the task when it considered the lists of materials and activities which are a part of the course of study.

The standards of present-day curriculum-making were met to the extent of allowing specialists in the field of science to pass on the accuracy of the subject matter and experts in the field of education to determine whether the materials were based on the best scientific principles of education. That the units were practical was demonstrated by the classroom teachers in various schools throughout the city as a final measure.

[1] This institution is conducted jointly by Western Reserve University and the Cleveland Board of Education.

Objectives.—The major objectives were obtained from curriculum studies,[1] and from them an attempt was made to arrive at the specific objectives for each grade. The needs as illustrated by the units in other courses of study, such as *The Course in Nature Study*, Detroit, Michigan, *Course of Study and Syllabus in Nature and Environment*, New York City, and "The Course in Nature-Study and Science in the University Elementary School,"[2] by Bertha M. Parker, were used in part as the basis for many of the specific objectives of the Cleveland course.

A chart of the objectives in the different fields of science was prepared. This chart is similar to the chart in the Fourth Yearbook of the Department of Superintendence[3] and agrees with it to a remarkable degree. The report in this yearbook appeared about the time the Cleveland course was being prepared for printing.

The committee placed emphasis on the interests of children as a basis for the preparation of a course in science to the extent to which these interests are known. The study by Carleton Washburne[4] which includes an analysis of two thousand questions was helpful in listing objectives for the course. The study by F. D. Curtis[5] in which 3,330 questions asked by pupils and 3,232 questions asked by adults were collected and analyzed shows a greater interest among boys and girls and among men and women in the physical sciences than in the bio-

[1] *a*) Henry Harap, *The Education of the Consumer*. New York: Macmillan Co., 1924.

b) Franklin Bobbitt, *How To Make a Curriculum*. Boston: Houghton Mifflin Co., 1924.

c) W. W. Charters, *Curriculum Construction*. New York: Macmillan Co., 1923.

[2] Bertha M. Parker, "The Course in Nature-Study and Science in the University Elementary School," *Elementary School Journal*, XXIV (October, November, and December, 1923, and January, 1924), 116–25, 197–205, 290–300, 368–81.

[3] Frank W. Ballou (Chairman), "Elementary Science and Nature Study," *The Nation at Work on the Public School Curriculum*, pp. 72–73. Fourth Yearbook of the Department of Superintendence. Washington: Department of Superintendence of the National Education Association, 1926.

[4] Carleton W. Washburne, *Scientific Methods in the Construction of School Textbooks* (a prospectus published by the World Book Company to advertise the author's textbook *Common Science*).

[5] Francis Day Curtis, *Some Values Derived from Extensive Reading of General Science*. Teachers College Contributions to Education, No. 163. New York: Teachers College, Columbia University, 1924.

logical sciences, at least for city dwellers since the questions were obtained from persons living in cities.

It was in this connection that the committee gathered about eighteen thousand questions from children in various parts of the city which are representative of the population of Cleveland. The tabulation and analysis of these questions are going on at the School of Education, Western Reserve University, but have not yet been completed. It is hoped that this study may yield something which will be helpful in the revisions of the course.

This type of need is definitely shown by the study made by G. S. Craig[1] in which he evaluated objectives on the basis of children's questions in science.

In his analysis of activities of man as a consumer, Henry Harap[2] organized 850 objectives, of which 207 pertain to the subject of science. Since these objectives relate to food, household materials, building materials, household skills, fuels, heating, lighting, and clothing, they formed in part the basis for the elementary course in science.

The objectives were given a seasonal arrangement so far as possible. This led to what may appear to some persons as a lack of continuity, but, when the units are considered in the development of a major objective for the entire year, the continuity of the course is apparent. The placement of the objectives according to grades was a serious problem. The criteria for grade placement were as follows: (1) Certain objectives were evaluated, as they had already been tried out in courses which had been used. (2) Certain objectives were evaluated by the twenty-six members of the committee. (3) Certain objectives were evaluated by trial in the schools.

Activities.—A tentative draft of the activities and procedure, based as nearly as possible on the abilities of the pupils, was prepared, and the course was tried out during the years 1925 and 1926 by the committee of twenty-six. The factors of environment, which in a large city are greatly varied, were also a basis for the activities,

[1] Gerald S. Craig, *Certain Techniques Used in Developing a Course of Study in Science for the Horace Mann Elementary School.* Teachers College Contributions to Education, No. 276. New York: Teachers College, Columbia University, 1927.

[2] Henry Harap, *op. cit.*, pp. 324–30.

the number and variety of activities being intended to give flexibility to the course to meet in part the varied elements of environment.

It is hoped that, as the present units are being used, teachers will be able to suggest other activities which may be better adapted to the needs of the pupils and may be incorporated when the course is revised.

Materials.—The committee realized the importance of materials for use in connection with each unit in order to give the children experiences with objects of their environment rather than with the mere reading or writing of words. To provide pictures, lantern slides, and exhibits of materials for each unit was a large undertaking, but, with the co-operation of the director of the Educational Museum, the committee was able to make suggestions which made it possible for the Educational Museum to provide visual materials for the trial of most of the units. By the time the course appeared in its present tentative form, materials had been arranged in sets and were available for the teachers' use. These sets of materials have done much to make possible the attainment of the objectives listed for each grade.

The objectives and the visual materials for several units in the elementary-science course are presented to show the type of visual aids which are supplied to teachers by the Educational Museum on request.

Each unit consists of objectives, activities, visual materials, and references for teachers and pupils. Space permits of only a few sample units, from which the activities and the references have been omitted; only the objectives and the visual materials are shown in the following excerpts.

First Grade

The cow

Objectives:

To learn some interesting facts about the life of the cow.
To know the cow as a useful animal.

Visual materials:

Lantern slides: cow, dairy industry, leather.
Mounted pictures: cow, dairy industry, leather.
Exhibit: leather.

Second Grade

COCOONS

Objectives:

To recognize cocoons.

To learn the different changes taking place within the cocoon.

Visual materials:

Lantern slides: the life of a butterfly, the monarch, the viceroy, the swallowtail.

Mounted pictures: butterflies and moths.

Exhibits: mounted butterflies—the mourning cloak, the tiger swallowtail; moth—the gypsy.

Fourth Grade

QUAIL AND OTHER GAME BIRDS

Objectives:

To learn to identify the game birds by their appearance, call, or flight.

To know their economic value.

Visual materials:

Lantern slides: quail, game birds.

Mounted pictures: quail, game birds.

Mounted specimens: quail.

Fourth Grade

FUR-BEARING ANIMALS

Objectives:

To know how the seal, beaver, muskrat, raccoon, fox, skunk, bear, and mink live.

To know that these animals are valuable to man for their fur.

Visual materials:

Lantern slides: beaver, seal.

Mounted pictures: beaver, seal, muskrat.

Exhibits: beaver log, fur.

Fourth Grade

ANIMAL FRIENDS—DOGS

Objectives:

To recognize the different kinds of dogs.

To know their uses to man.

Visual materials:

Lantern slides: dogs.

Mounted pictures: dogs.

Film: dogs.

Fifth Grade

HOUSEHOLD INSECTS

Objective:

To know some household insects, such as ants, bedbugs, cockroaches, lice, and moths, and to learn how to control them.

Visual materials:
Lantern slides: household insects.
Mounted pictures: household insects.
Exhibits: household insects.

FIFTH GRADE

HOW TO TELL TIME

Objectives:
To learn how people used to tell time.
To learn how we tell time now.
Visual materials:
Lantern slides: primitive sundials, modern clocks.
Mounted pictures: sundials, modern clocks.
Booklets: How To Tell Time.

SIXTH GRADE

GAME ANIMALS

Objective:
To know why man hunts the rabbit, squirrel, fox, bear, and deer.
Visual materials:
Lantern slides: squirrels.
Mounted pictures: squirrels, rabbits.
Mounted specimens: rabbit, squirrel, muskrat.

SIXTH GRADE

COMMUNICATION—MODERN METHODS—TELEPHONE

Objective:
To understand the mechanism of the telephone and how it works.
Visual materials:
Lantern slides: telephone.
Film: how the telephone works.
Exhibit: telephone.

Certain supplies, such as materials for making radios, are furnished by the pupils or the school. Pupils are usually willing to pay the small cost of the articles which they make and which they may take home as toys or apparatus. Certain minimum equipment and supplies are available for teachers in all schools. The equipment is, of course, not so elaborate as to make the cost prohibitive. The curriculum center and the elementary-school buildings will be equipped with such articles as an inexpensive desk with water, electric current and gas, Bunsen burner, a few tools, Petri dishes, and test tubes. Much is being said about creative work in the

schools—why not help develop the future Edison or Burbank? The writer recently found a boy in the sixth grade who had made application at Washington for a patent of a device of his own invention.

The small investment for equipment not only helps develop the scientist but opens new interests to each individual and answers many of the questions about his environment. Principals have testified to this many times since the new course has been put in the schools. One principal has said repeatedly that the introduction of science has changed the conduct of the whole school by claiming the attention of the boys and girls in making their motors and radios to such an extent that they do not have time for mischief. Pupils in this school beg to remain after school and at noon to carry on their work.

The following quotation is from a report which appeared in the *Cleveland Plain Dealer* June 29, 1927. When this report was published, the course had been in the schools a little more than a year.

"Last year, in just a few months, I confiscated from small boys twenty-eight weapons of all varieties," Miss Elizabeth S. Keegan, principal of the school, said. "Most of these were dirks made of cast-off butcher knives. There were many pairs of brass knuckles and blackjacks. I found no revolvers, but many a pocket bulged with man-sized cap pistols. Fights were uppermost in the mind of every boy.

"But today harmony reigns. Fighting has ceased. The spirit of amity perches above the door, and little girls and boys play and work together in peace.

"Science wrought the change. A course in natural science has been running all year, and the children have become so interested that they no longer want to fight."

Another type of valuable material is that which is gathered and brought in by the pupils for the little museum in their room or in the school. In one of the city schools, in a district where one might think materials did not exist, this idea was developed with a remarkable collection as the result. The list of articles on exhibit in one room numbered 28 and included grain; shelf fungi; nuts—walnut, butternut, etc.; minerals; shells; and a snake skin. These articles in many cases represented unexplored fields of science for the child and were helpful materials for many units in the course of study.

Valuable supplementary materials in the form of exhibits and

booklets may be obtained from commercial concerns. Several lists of commercial firms supplying such materials have been prepared in the past few years, but, owing to the nature of the business world, such lists soon are out of date. In order to meet the needs of the elementary-science course and make new materials available, the writer is preparing a list of firms which are willing to send their materials to teachers gratis or for a small sum to cover part of the cost.

TABLE I

DEMAND FOR ELEMENTARY-SCIENCE MATERIAL FROM THE EDUCATIONAL MUSEUM IN MAY, 1925; MAY, 1926; AND MAY, 1927

	Total Number of Orders for Material Filled	Orders for Elementary-Science Material Filled	
		Number	Percentage of Total
May, 1925:			
Slides	491	39	7.9
Pictures	840	30	3.6
Exhibits	267	10	3.7
May, 1926:			
Slides	866	217	25.1
Pictures	1,145	58	5.1
Exhibits	357	52	14.6
May, 1927:			
Slides	1,377	297	21.6
Pictures	1,616	315	19.5
Exhibits	1,000	309	30.9

Testing the course.—The tentative course of study was printed and made available to all schools in the city, but its use was not required. No check has been made to determine the number of schools actually teaching elementary science.

The use of the new course may be judged in part by the demand for materials from the Educational Museum. Table I shows the amount of elementary-science material supplied as estimated by the museum. This table does not represent the total amount of instruction in elementary science since many orders could not be filled at the time and it is reasonable to assume that many lessons were taught by making use of materials in the schools and from other sources.

Another indication of interest in the subject of science is the number of teachers taking their pupils to the Natural History Mu-

seum. This museum shows the following increase in elementary-school attendance: 1923–24, 7,915; 1924–25, 21,439; 1925–26, 27,577; and 1926–27, 30,539.

Before the present course was printed, the following questionnaire was sent out to obtain teachers' reactions and suggestions for revising the course.

What objectives are repeated? Which objectives should not be repeated?
Are sufficient activities listed to attain the objectives for each unit?
Which teaching units are inappropriate for the grade?
For what units are materials not available?
In which units are the materials listed inappropriate?
Which references are unsatisfactory?
What units should be eliminated?
What units should be added?
What changes would you make in the elementary-science course?

The suggestions received were evaluated by the committee and used in part as a basis for the revision of the course.

Requests for help in the schools have frequently come to the science department of the School of Education, Western Reserve University. Members of the department have given demonstrations before the teachers and have made frequent visits to make suggestions and to help with other units. In this way the science course has been established in a number of the schools.

Teachers' training.—Teachers immediately began to realize their lack of background and training for the science work and enrolled in large numbers in the senior-college courses in Western Reserve University which were open to teachers in service.

With the new elementary-science course in the schools, the need for professionalized subject-matter courses both in the junior college and in the senior college became evident. In order to meet that need, two courses were organized in the School of Education, one dealing with biological subject matter and the other with physical science. Each course carries three semester hours credit, and both are required of all first-year students. In the second and third years students are allowed to elect other courses which have been organized to meet the needs; these courses are open to teachers in service during the year and in the summer. In addition, courses are offered by Western Reserve University and the Case School of Applied Science in certain fields of science.

In connection with the School of Education, Western Reserve University, William Vinal will conduct a nature and camp-counselor school at Hudson, Ohio, which will be open to persons interested in recreation, camping, and nature guiding.

This year eight schools in Cleveland have been set aside as curriculum centers. One of the eight schools is for experimental work in elementary science. In this school under the direction of the principal and a supervisor, units are being tried out and revised. Teachers in other schools should obtain valuable suggestions and help from this curriculum center.

For most of the units, the reading materials were inadequate and not adapted by grades to the pupils. The committee gave much time to the study of available reading materials. The public library offered valuable help in suggesting standards for selecting the references. The need for some type of basal science reader was more in evidence as the work on the course progressed. With suitable science readers for each grade, it will be an easy matter to find supplementary-reading materials in sets of books and current science magazines.

From his experience in making the course and from his contact with the pupils and teachers in the schools, the writer believes that it would be desirable to prepare a well-organized outline of subject matter for the teachers and in some way to keep before the teachers the major objective of which each unit is a part. Visual materials should be better organized to meet the needs of each unit in the course and should be available to all schools. Reference books for both teachers and pupils should be available in the school or through the public library. Minimum equipment should be in every school.

Finally, there is the need for teachers who have had a sufficient number of science courses to give them a background and a point of view for the work. This need immediately confronts the schools of education with the problem of organizing professional subject-matter courses in science for teachers in service as well as for the regular students.

It is the writer's belief that the elementary science of the future is dependent on these three essentials: (1) a course of study organized to meet the needs and interests of the children; (2) suitable materials, such as reading matter, visual aids, and live specimens; and (3) adequately trained teachers.

Educational Writings

REVIEWS AND BOOK NOTES

Making professional curriculums for teachers.—To provide a technique for the reorganization of professional courses in teachers' colleges and in colleges of education in universities is the declared intent of *The Commonwealth Teacher-Training Study.*[1] At various times since the inception of the investigation three years ago the authors of the report have given, in public addresses and in published sketches of the project, a preview of what the final volume contains in detail. These announcements and the participation of hundreds of teachers, school administrators, and teachers of education in supplying data to the investigators have provided advance notice of the scope and purpose of the study, the report of which will be welcomed by many who anticipate in it an improved instrument for curriculum-making.

The report can be read in several editions, each successively more elaborate, within the scope of two covers. Following a preface by the authors and an introduction by Chancellor Samuel P. Capen, the first chapter gives a summary of the entire study. This chapter opens with certain preliminary considerations and a four-page discussion of teachers' objectives, obviously intended to relieve the authors from the necessity of making a first-hand attack on this difficult problem. The investigation proper is reported under six general headings, as follows: "A Master-List of Teachers' Traits," "A Master-List of Teachers' Activities," "Evaluating Teachers' Activities," "Reliability of the Evaluations," "Using the Evaluated Activities To Revise Existing Courses," and "Using the Evaluated Activities To Construct New Courses." In the remaining five chapters of Part I, which embraces a total of 222 pages, these topics are elaborated in detail.

Part II of the report, "The Findings," adds 434 pages and contains in further detail "data developed by the study" and "presented for use by other investigators." Here are to be found lists of traits, check-lists of activities, definitions of terms, and summary tables. The reader is informed that an unabridged edition, typewritten and bound under the title "Official Record," is on file with each of the authors and that a third copy is in the Reference Library of the Bureau of Educational Research of Ohio State University.

[1] W. W. Charters and Douglas Waples, *The Commonwealth Teacher-Training Study.* Chicago: University of Chicago Press, 1929. Pp. xx+666. $4.00.

The most important contribution of the report is the master-list of teachers' activities. It is apparent that the most effort was expended on the preparation and checking of the original list and its evaluation by a consensus of expert opinion. The value of the whole project will depend on the validity of this list and the degree to which the list is usable by college instructors. The authors present considerable statistical support of their findings. It is certain that future students of professional curriculums for teachers must study the list with great care.

The authors also give considerable attention to methods of using the evaluated activities with the apparent intent to make their findings of immediate use in the improvement of courses and curriculums. That they have not been equally successful in this phase of the study is clear. As one examines the results of the investigation at any one of its several levels, the fear arises that the program of determining content by this technique is too elaborate to be useful to many college teachers and that the form in which the material now appears will fall short of having the influence on the improvement of teacher-training that it is designed to have. There is need for a third step in the program which the authors recognize but do not take, namely, the synthesis of their findings into satisfactory courses. The reason given for not taking this step is lack of time and resources. It is reasonable to wonder, however, whether this last and necessary step is not more difficult and baffling than the report reveals.

The authors recognize the criticism already heard concerning activity analysis and point out that subject-matter analysis also has its place in the determination of the content of teacher-training courses. They give less consideration and weight to the latter method of curriculum determination than will many of the critics of the study, who will still believe that available knowledge in psychology, for instance, should determine what shall be taught to teachers.

The sections of the report dealing with the traits of teachers appear to the reviewer to be distinctly less valuable than are those dealing with the activities of teachers. This is doubtless because of the difficulty of studying human traits and the inadequacy of all our techniques for the analysis and evaluation of human behavior. This part of the report leaves much to be desired although it is not without some value.

Notwithstanding the indicated limitations of the report, most of which are clearly recognized by the investigators, the study represents a comprehensive and thoroughgoing effort to provide a dependable technique for the making of professional curriculums for teachers. All who would improve courses in education will find here a large and useful contribution to their efforts.

M. E. HAGGERTY

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A critical treatment of intelligence tests.—No one engaged in using intelligence tests either in a practical way or for purposes of investigation can afford to

neglect the careful reading of Professor Dearborn's new book.[1] At the same time the book is not too technical for the general reader and the student who is acquiring a knowledge of mental tests. The author confines himself for the most part to the evaluation of the methods and results of intelligence-testing with only such description of tests themselves as is necessary for that purpose.

Two major contentions provide the theme of the book. (1) Intelligence has been conceived of too narrowly in terms of ability to use symbols (language and numbers). (2) Both professional opinion and lay opinion have erred in concluding that the results of intelligence tests have shown a preponderant influence of heredity as contrasted with environment in the production of intelligent behavior. In the elaboration of these two themes Professor Dearborn has brought together many detailed facts and submitted them to analysis with a thoroughness and acumen that command admiration and, so far as the reviewer is concerned, practically unqualified agreement.

More specifically, the argument with reference to the nature of intelligence runs somewhat as follows: The traditional view of intelligence identifies it with that capacity which is successful in dealing with school subjects, chiefly of the nature of language and arithmetic. There is, however, ground for the belief that there are other kinds of intelligence or at least that other kinds of abilities must be sampled before we have genuine tests of intelligence. Since Dearborn adheres to the Thorndike view of the nature of intelligence as over against that of Spearman, it is probably the latter alternative that he proposes although he speaks of "thing" intelligence as though it were a separate and contrasting kind of intelligence. The overestimation of ability to deal with symbols as a criterion of intelligence accounts for such facts as the lack of success in school of large numbers who are successful in life and the higher marks made in college by professors of language as contrasted with professors of chemistry and physics. It is for the same reason that performance tests have not correlated as well with school marks as have the ordinary forms of intelligence tests.

In his discussion of heredity and environment, Dearborn begins with the generally accepted view that intelligence tests measure achievement rather than native ability. The usual view, however, is that it may be safely assumed that, except in extreme cases, opportunities for learning are so nearly equal that what has been learned is an indirect measure of ability to learn. Dearborn holds that this assumption is incorrect and presents a great deal of detailed evidence to that effect. Environmental influences are much more subtle and variable than many are disposed to think. For example, with regard to racial differences, he says, "When we fully realize the power of the home, of the school, and of the more general cultural environment, and take account of the complications which variations in the rate of maturing may introduce, we can hardly interpret the findings of the tests in regard to different racial groups as evidence of hereditary

[1] Walter Fenno Dearborn, *Intelligence Tests:* Their Significance for School and Society. Boston: Houghton Mifflin Co., 1928. Pp. xxiv+336. $2.50.

intelligence alone" (pp. 132–33). Incidentally, it may be remarked that some interesting advance information of some of the findings of the Harvard growth study is included as part of the evidence, especially evidence for the variability of maturity factors and their influence on intelligence.

Such a brief summary as the foregoing can give no very adequate idea of the contents of the book—the detailed facts, the problems raised, and the thorough and critical consideration of both sides of every question. It may be, as the author himself admits, that his presentation is "a reaction against the dogmatic statements which . . . . attribute so preponderating an influence to that which is inborn, and so determined at, or long before, birth" (p. 268). The truth is, of course, that the concepts of nature and nurture are such that, a priori, both these factors are *indispensable* for development. Investigations merely confirm the logically necessary conclusion that it is not possible to determine their relative effects. In the absence of such knowledge, it is both safer and saner to avoid acceptance of a wholly unproved theory that by its very nature tends to paralyze educational endeavors. Professor Dearborn has long been identified with the testing movement and is qualified to speak authoritatively on the subject. For this reason it should be ground for considerable satisfaction to all who are interested in education that he has not allowed his enthusiasm for the indubitable accomplishments of this movement to blind himself to its just as indubitable limitations.

E. H. Cameron

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A revised edition with minor changes.—The main change in Professor Pyle's treatment[1] of learning, the first edition of which was published in 1921, consists in the addition of statements of 115 principles and their educational application. These statements are placed at the ends of the chapters to which the author believes them to be most closely related. The other changes consist of resetting of the type, redrawing of the figures, occasional additions to the footnotes and the bibliography, slight changes in paragraph division and wording, occasional slight additions in the old chapters, and the addition of two chapters. One of the new chapters treats the psychology of the special subjects in five pages.

The statements and their applications are only loosely related to the text of the chapters. For example, the fourth principle, at the end of chapter ii, reads as follows: "Practice increases efficiency in three ways: (1) by establishment of the bond, (2) by decreased resistance in the established neural route, (3) by adaptation of the muscles to the special movements required" (p. 35). The chapter deals with the learning curve, and no facts are presented in it which support the principle. It is a pure addendum, based on the author's

[1] William Henry Pyle, *The Psychology of Learning*. Baltimore: Warwick & York, Inc., 1928 (revised). Pp. x+442. $2.32.

speculation concerning the nature of learning. Some of the principles are repetitive; for example—"Knowledge of the end sought is an incentive to practice" (p. 80). "Objectives should be known and clear. The teacher should know definitely what he is going to do, and he should help the child and the community to see it also" (p. 106). "The teacher should help pupils to understand the purpose and the nature of habits to be formed" (p. 113). The first one follows chapter iv, and the last two follow chapter v. Some are pious generalities that are truisms unless they are given specific, scientific support, which is not the case; for example—"The teacher should see that pupils use the most economic methods of forming habits" (p. 110). Some are contradictory to evidence presented in the chapter; for example—"There is a high positive correlation between learning capacity and general intelligence" (p. 263). On page 254 it is shown that three learning tests yield correlations with the Army Alpha test of .25, .30, and .32, respectively. By no stretch of the imagination could these coefficients be regarded as high.

In the Preface the author says, "In this book I have tried to state every thing [*sic*] that is known about learning" (p. vii). He evidently believes that practically nothing new was found out about learning between 1921 and 1928 since he has made practically no additions to the summary of experimental evidence. For example, in the chapter in which distribution of practice time is discussed, chapter iii, no reference is made to Cummins' rather elaborate study although it is cited in the bibliography.

The figures are inadequate. The curves are excessively smoothed and therefore give false impressions. The titles are frequently incomplete, and the units of measurement of the co-ordinates are usually not labeled. An example may be found in Figure 12 (p. 50).

The book is somewhat useful because it is the only moderate-sized textbook on the subject of learning, its only rival being Thorndike's large volume. Its usefulness is marred, however, by serious faults, which the second edition has done practically nothing to remove.

FRANK N. FREEMAN

A textbook in child psychology.—"What shall be expected of the child as to health standards? What things produce satisfying results and cause an act, however good or bad, to be repeated and become a habit? . . . . What things that we do will be imitated to the benefit or detriment of a child's behavior? What general considerations underlie the choice of games, occupations, stories, and songs to meet the educational needs of young children? What environment shall be provided to insure adequate social adjustments?" (Pp. 1–2) These are some of the challenging questions raised by Ada Hart Arlitt in the introductory chapter of her recent book.[1] They are problems which parents, teachers, and others having to do with the care and training of infants and

[1] Ada Hart Arlitt, *Psychology of Infancy and Early Childhood*. New York: McGraw-Hill Book Co., 1928. Pp. xii+228. $2.00.

young children will meet sooner or later. While there is a considerable body of literature dealing with such problems as these, this book is the first to present, in a form elementary enough for the lay reader and the beginning student, not only the generally accepted principles of child psychology but the findings of such recent studies as those of Baldwin, Gesell, Watson, and Woolley. As the author points out, laboratory studies in child behavior and studies based on observations of individual behavior have added greatly to our knowledge of child psychology.

The topics discussed in this book are similar to those treated in other books in introductory child psychology. Chapter ii discusses at some length the influence of inherited predispositions versus the influence of environmental conditions. The next four chapters deal with the innate equipment and innate responses of infants, including reflex and random activities, instinctive tendencies, and emotions. The usual chapters on habit, sensation and perception, memory, imagination, and the thinking process follow. In the treatment of each topic the material is applied to the preschool period and fully illustrated by concrete examples from this period. Of the last three chapters, one discusses rather briefly four forms of expression, namely, language, drawing, work with clay, and rhythm and music, as these manifest themselves in the earliest years; one deals with the social attitudes and the development of personality; the final chapter describes the numerous individual differences in rate of growth, intelligence, emotional stability, strength of instinctive tendencies, etc.

Throughout the book are numerous suggestions as to desirable procedures in dealing with such problems as are enumerated in the introductory chapter. Each chapter is followed by a list of from three to nine carefully selected chapter references to well-known authorities in the field. These lists add materially to the usefulness of the book. Each chapter is followed also by a series of excellent questions and exercises for the student.

The book will prove useful in study groups of parents or teachers and will be especially useful as a textbook for undergraduate students preparing to teach in the nursery school, the kindergarten, and the primary grades. Supplemented by directed observation, related reading assignments, and elaboration by the instructor, the book will give the prospective teacher an understanding of the most important problems of child development.

ALICE TEMPLE

A human-interest library for the elementary grades and the junior high school.—The expanded reading program of the elementary school, which has followed a decade of emphasis on silent reading, has stimulated greatly the publication of better material for school libraries. Two or three notable sets of references, encyclopedic in character, have appeared since 1920. However good the encyclopedia is for its purposes, its very nature forbids that continuous reading which follows a logical coherence among the topics treated instead of an arrange-

ment dictated by the alphabet. A new set of reference books[1] possesses much of the comprehensive character of an encyclopedia but presents its material in an organization which is determined by the human interests of the reader.

The set is composed of six volumes, the nature of which may be indicated best by a brief statement concerning each. Volume I, *The Child and His World*, is for the younger child. It includes a section of stories, a section featuring many kinds of manual projects, a section dealing with various types of child organizations, and a section dealing with the various school subjects. Volume II, *Stories of Science*, presents at the level of elementary-school children a most interesting body of science material. Volume III, *Great Industries*, is particularly useful as supplementary reading for the social sciences and will do much to enrich the child's knowledge concerning those great enterprises which are beyond his observation. Volume IV, *Our Country in Romance*, would not satisfy as a textbook in history but does give in interesting style a connected story of America. Volume V, *Around the World*, is a historical and geographical travel reader. Volume VI, *Leaders of All Times*, contains brief, interesting biographies of outstanding characters, both ancient and modern.

Competent special contributors, well known in their respective fields, have written many of the special articles. The whole set gives evidence of careful editing. More than two thousand pictures and diagrams, some in color, deserve special commendation. Each volume is indexed, and a general index to the whole set is included in Volume VI. A special bibliography for supplementary reading prepared by an expert librarian is given at the end of each volume. The set is available in three different bindings, one of which is particularly attractive for the school library since the volumes are in different colors with a colored picture on the front cover of each.

The set is an attractive and interesting series of books for upper elementary and junior high school pupils and can be recommended to the consideration of any school librarian.

G. T. BUSWELL

Supplementary-reading materials for the elementary school.—The teaching of silent reading has done much to stimulate the publication of books to supplement the basic textbooks in reading. The large quantity of this supplementary material prevents an individual review of each book. However, brief statements concerning some of the more promising books may be helpful to teachers in selecting books either for supplementary use or for the reading table. This review covers twenty-three books, all but one of which appeared during the year 1928.

[1] The New Human Interest Library: Volume I: *The Child and His World*, pp. xii+398. Volume II: *Stories of Science*, pp. x+520. Volume III: *Great Industries*, pp. x+396. Volume IV: *Our Country in Romance*, pp. x+396. Volume V: *Around the World*, pp. x+416. Volume VI: *Leaders of All Times*, pp. x+438. Chicago: Midland Press, 1928.

Three of the books will be of particular interest to teachers in the primary grades. One of these, *Wags and Woofie*,[1] recognizes the interest of children in characters which appear continuously in all the stories in a book. The book contains fifteen stories which relate the experiences of two puppies who have an interesting series of adventures. The illustrations are in black and white. The type is set in uneven lines rather than in regular paragraph form. The second book, *Jack and Susan Stories*,[2] contains ten related stories. Following these stories are ten sections made up of "things to do." After a story has been read, the exercise that has the same name that the story has is to be used as a game or a drill. The book is illustrated in color, and the type is set in regular paragraph form. The third book, *Little World-Children*,[3] is intended for children of approximately the third-grade level. It consists of a series of chapters describing the home life and habits of children in different parts of the world. Its content will have considerable value in widening the interests and information of children.

Material for the primary grades of a somewhat different type is found in two sets of readers. One of these sets, which is entitled "Social Science Readers,"[4] contains four books. The reading matter is given on one page, while on the opposite page appears a large picture in color. In some cases a page has not more than three lines of printed material; the printing on other pages amounts to as much as fourteen lines. This large use of pictures with a small amount of reading material may well raise the question of the relative value of pictures and text in reading books. The pictures are very attractive, and the four books can be depended on to appeal to any first-grade child. Another use of the series idea occurs in the *Little Folk's Library*,[5] two sets of which have just appeared. Each set consists of twelve paper-bound books in an attractive pasteboard case. The books are four and one-half by five and three-fourths inches in size and, when grouped in their case, occupy about two inches on a bookshelf. Each book contains forty-eight pages. Although the subject matter is varied, it consists in large part of classics commonly used in the first grade. The general makeup of the books is such that their popularity with children seems assured.

[1] Edna M. Aldredge and Jessie Fulton McKee, *Wags and Woofie*. Boston: Ginn & Co., 1928. Pp. viii+112. $0.64.

[2] Frances M. Darby, *Jack and Susan Stories*. New York: Macmillan Co., 1928. Pp. vi+180. $0.80.

[3] Elizabeth Ellis Scantlebury, *Little World-Children*. Boston: Ginn & Co., 1928. Pp. vi+126. $0.72.

[4] Helen S. Read, Social Science Readers: *An Airplane Ride*, pp. 36; *An Engine's Story*, pp. 34; *Grandfather's Farm*, pp. 36; *A Story about Boats*, pp. 36. New York: Charles Scribner's Sons, 1928.

[5] *Little Folk's Library:* First Series; Second Series (edited by Catherine T. Bryce and Edna Turpin). New York: Newson & Co., 1928.

Six of the books are for children in the middle grades. Three of these make up the "Mother Nature Series."[1] These books would make useful supplementary reading for the nature-study period. The illustrations are not particularly good. One[2] of the six books will be of interest primarily to children who live in cities or are acquainted with cities. It consists of a series of stories gathered from seven-year-old children after they visited places of interest in New York City. It is a good illustration of a new method of constructing reading materials which should receive serious consideration. Two books in this group are of the imaginative type. One, *National Traits and Fairy-Lore*,[3] is a series of fairy stories drawn from different countries. Each section of the book consists of an introduction in which some general characteristics of a country are given and a selection of fairy tales or myths which will help children to understand the spirit of the people in that country. On the whole, the book has much to commend it. The sixth book in this group, *A Quart of Moonlight*,[4] is a continued story with a single plot. The fanciful and imaginary story which is woven around a quart of moonlight that came to the earth on an errand is an interesting addition to the many tales of the moon already in print.

The eight remaining books will be of chief interest to children in Grades V–VIII. One of these, *Friends in Strange Garments*,[5] is a collection of stories from several foreign countries. These stories would make interesting supplementary reading for children studying the geography of other lands. *The Cubby-Bears in California*[6] is written in verse and is intended to give children a picture of the natural beauty, resources, and industries of California. It can be used to supplement the geography of the Pacific Coast region. *Tales of Borinquen*,[7] a collection of advanced stories about Porto Rico, will be useful material in the eighth grade or even in the high school. The teacher of English will find good material in this book. *Little Plays from Greek Myths*[8] is a collection of valuable

[1] Fannie Wyche Dunn and Eleanor Troxell, Mother Nature Series: *In Field and Forest*, pp. 288; *Baby Animals*, pp. 160; *By the Roadside*, pp. 256. Evanston, Illinois: Row, Peterson & Co., 1928.

[2] *City Stories*. Recorded and arranged by Florence E. Matthews and Rebecca J. Coffin. New York: Macmillan Co., 1928. Pp. xii+102. $2.00.

[3] Anne Williams, *National Traits and Fairy-Lore*. New York: Charles Scribner's Sons, 1928. Pp. xx+192.

[4] James Woodward Sherman, *A Quart of Moonlight*. Boston: Little, Brown & Co., 1928. Pp. xii+148. $0.80.

[5] Anna Milo Upjohn, *Friends in Strange Garments*. Boston: Houghton Mifflin Co., 1927. Pp. xii+148. $0.92.

[6] Julia Woodworth LeCount and George Cleveland Kyte, *The Cubby-Bears in California*. Chicago: Rand McNally & Co., 1928. Pp. x+204.

[7] Elizabeth Kneipple Van Deusen, *Tales of Borinquen*. Newark, New Jersey: Silver, Burdett & Co., 1928. Pp. viii+294.

[8] Marie Oller and Eloise K. Dawley, *Little Plays from Greek Myths*. New York: Century Co., 1928. Pp. xiv+176. $0.84.

material for upper-grade dramatics. It will not only introduce children to some of the classic selections from Greek literature but also furnish a body of interesting material for group readings where elaborate dramatization is difficult to provide. *Winding Roads*[1] is a miscellaneous collection of stories which have been found interesting and which are adapted to children in the seventh or eighth grade. A travel reader[2] by Frances Carpenter is excellently illustrated and affords a very commendable picture of life in a modern city. *Pilots and Pathfinders*[3] is a series of short biographies of historical characters which will add materially to human interest in history. The characters treated are drawn from both ancient and modern times. *Pilgrims, Indians, and Patriots*[4] is well designated as "The Pictorial History of America from the Colonial Age to the Revolution." The many illustrations, some of which are lettered in order better to illustrate the text, make it a very attractive book for the upper grades.

The enrichment of a reading program depends much on the teachers' familiarity with the best material that is available for the various school grades. All the books mentioned in this review have sufficient merit to justify their examination by teachers seeking new material.

Making the informal new-type test.—Some educators consider the standardized test the solution of many of our present educational evils. Indeed, it has become somewhat common to regard the scientifically constructed test as the *ne plus ultra* of educational measurement and the home-made test as only a makeshift. Against such a concept, a protest is raised by Orleans and Sealy. According to them, the carefully made objective test, prepared locally, is not a substitute for the commercialized test but is actually to be preferred to it (pp. 55–57). The chief purposes of their book[5] are to aid the teacher in constructing objective tests and to help the supervisor in organizing the teachers to do this type of work for the school system.

The authors point out that the typical course in tests and measurements is devoted to teaching the theory of testing, to acquainting the students with commercialized tests, and to teaching them how to deal with the scores obtained through the use of such tests. Such a course fails to give the students special

[1] Wilhelmina Harper and Aymer Jay Hamilton, *Winding Roads*. New York: Macmillan Co., 1928. Pp. xiv+292.

[2] Frances Carpenter, *Ourselves and Our City*. Chicago: American Book Co., 1928. Pp. xii+298. $0.92.

[3] William L. Nida and Stella H. Nida, *Pilots and Pathfinders*. New York: Macmillan Co., 1928. Pp. xii+412. $1.20.

[4] Randolph G. Adams, *Pilgrims, Indians, and Patriots*. Boston: Little, Brown & Co., 1928. Pp. xvi+206. $3.00.

[5] Jacob S. Orleans and Glenn A. Sealy, *Objective Tests*. Yonkers-on-Hudson, New York: World Book Co., 1928. Pp. x+374. $2.20.

training in constructing new-type tests, although, according to the authors, this is the type of test that should be used most frequently.

As a means of making their discussion concrete, the authors describe a testing program of which they had charge. Some sixty teachers co-operated in making and giving the tests. The procedure followed by the supervisor in getting the teachers to feel the need of a new type of test, in securing their co-operation, and in carrying out the actual work of constructing the tests is presented in detail. The work is described as it was actually done, while running comments and a subsequent chapter suggest how it would be done a second time.

Two introductory chapters contrast the old and the new tests. Eight chapters tell how the plan was conceived and carried out; two of these chapters are devoted to an interpretation of the results and the teaching and administrative uses which can be made of them. Twenty-five pages are devoted to a discussion of types of objective questions, with examples. The tests which were designed and given are presented in full (60 pages) together with directions for giving and scoring. The answers follow.

This book should appeal to the educator with a practical turn of mind. It should be a help in carrying through a similar program of interesting teachers in constructing better tests. Certain sections of the book would make a desirable supplement to a number of textbooks now used in courses in tests and measurements.

The teacher who wants an elementary acquaintance with the statistics of testing will find the material helpful and carefully presented. A considerable part of the book deals with simple statistical procedures in a practical way. The extent to which textbooks and courses in measurement individually provide for training in elementary statistical processes indicates the need for such training as one of the basic skills of educators. Perhaps the chief obstacle is that the usual course in statistical methods does not emphasize sufficiently the elementary processes in a practical situation but rather specializes on theory in an abstract situation. The books dealing with measurement are at present in somewhat the position of a geography book which had to devote several chapters to telling the pupil how to read. Textbooks and courses in measurement should be relieved of the burden of rudimentary training which they now have to carry.

DOUGLAS E. SCATES

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CURRENT PUBLICATIONS RECEIVED

GENERAL EDUCATIONAL METHOD, HISTORY, THEORY, AND PRACTICE

CHADBOURNE, AVA HARRIET. *The Beginnings of Education in Maine.* Teachers College Contributions to Education, No. 336. New York: Teachers College, Columbia University, 1928. Pp. vi+136.

COALE, WILLIS BRANSON. *The Professional Needs of Teachers of English.* Teachers College Contributions to Education, No. 334. New York: Teachers College, Columbia University, 1928. Pp. 86.

COHEN, I. DAVID. *Principles and Practices of Vocational Guidance.* New York: Century Co., 1929. Pp. xxiv+472. $3.00.

COX, PHILIP W. L., PETERS, CHARLES C., and SNEDDEN, DAVID. *Objectives of Education.* Second Yearbook of the National Society for the Study of Educational Sociology. New York: Teachers College, Columbia University, 1929. Pp. vi+186.

Current Educational Readjustments in Higher Institutions. Yearbook Number XVII of the National Society of College Teachers of Education. Edited by Stuart Appleton Courtis. Chicago: University of Chicago Press, 1929. Pp. vi+178. $1.00.

DESCOEUDRES, ALICE. *The Education of Mentally Defective Children.* Translated by Ernest F. Row. Boston: D. C. Heath & Co. Pp. 312. $2.00.

GRAY, WILLIAM S., and MUNROE, RUTH. *The Reading Interests and Habits of Adults.* New York: Macmillan Co., 1929. Pp. xiv+306. $3.50.

JOHNS, ROE LYELL. *State and Local Administration of School Transportation.* Teachers College Contributions to Education, No. 330. New York: Teachers College, Columbia University, 1928. Pp. x+134.

JONES, JANE LOUISE. *A Personnel Study of Women Deans in Colleges and Universities.* Teachers College Contributions to Education, No. 326. New York: Teachers College, Columbia University, 1928. Pp. 156.

MENDENHALL, EDGAR. *The City School Board Member and His Task.* Pittsburg, Kansas: College Inn Book Store, 1929. Pp. x+104. $1.50.

MYERS, ALONZO FRANKLIN, and BIRD, OSSIAN CLINTON. *Health and Physical Education for Elementary Schools.* Garden City, New York: Doubleday, Doran & Co., Inc., 1928. Pp. viii+342. $1.50.

RAINEY, HOMER P. *Public School Finance.* New York: Century Co., 1929. Pp. xx+386. $3.00.

REALS, WILLIS HOWARD. *A Study of the Summer High School with a Detailed Analysis of the Achievement in Two Summer High Schools.* Teachers College Contributions to Education, No. 337. New York: Teachers College, Columbia University, 1928. Pp. vi+88.

REAVIS, WILLIAM C., and BUTSCH, RUSSELL L. C. *Abstracts of Unpublished Masters' Theses in the Field of Secondary-School Administration.* Bulletin Number 24 of the Department of Secondary-School Principals of the National Education Association. Cicero, Illinois: H. V. Church, 1929. Pp. 202.

Scientific Method in Supervision. Second Yearbook of the National Conference of Supervisors and Directors of Instruction. Edited by James Fleming Hosic. New York: Teachers College, Columbia University, 1929. Pp. xii+308.

Secondary Education in California: Report of a Preliminary Survey. Sacramento, California: State Department of Education, 1929. Pp. 128.

Significant Changes and Trends in the Teaching of Mathematics throughout the World since 1910. Fourth Yearbook of the National Council of Teachers of Mathematics. New York: Teachers College, Columbia University, 1929. Pp. x+186.

The Supervision of Secondary Subjects. Edited by Willis L. Uhl. New York: D. Appleton & Co., 1929. Pp. xvi+674.

THORN, ALICE G. *Music for Young Children.* New York: Charles Scribner's Sons, 1929. Pp. xvi+158. $1.25.

WHITNEY, FREDERICK LAMSON. *The Junior College in America.* Colorado Teachers College Education Series, No. 5. Greeley, Colorado: Colorado State Teachers College, 1928. Pp. xxii+258.

BOOKS PRIMARILY FOR ELEMENTARY-SCHOOL TEACHERS AND PUPILS

Adventures in Reading: Fourth Year, pp. xii+404, $0.80; Fifth Year, pp. xii+432, $0.84; Sixth Year, pp. x+440, $0.88. Edited by E. Ehrlich Smith, Orton Lowe, and I. Jewell Simpson. Garden City, New York: Doubleday, Doran & Co., Inc., 1928.

BENSON, C. BEVERLEY, with the assistance of ARTHUR R. JENSEN. *Arithmetic Practice:* For Finding and Correcting Weaknesses in the Step Difficulties of the Processes: Book Five, pp. 130, $0.60; Book Six, pp. 128, $0.60. New York: Macmillan Co., 1929.

BEST, SUSIE M. *Steer for New Shores:* How Medieval Europe Found and Explored America. Chicago: Beckley-Cardy Co., 1929. Pp. 216. $0.90.

BLAISDELL, ETTA AUSTIN. *The Rhyme and Story Second Reader.* Boston: Little, Brown & Co., 1929. Pp. 208.

BOLENIUS, EMMA MILLER. *The Bolenius Readers:* Fourth Reader. Boston: Houghton Mifflin Co., 1929 (revised). Pp. xii+308. $0.80.

BRANOM, M. E. *The Branom Practice Tests in Elementary Geography.* New York: Macmillan Co., 1928. Pp. iv+168. $0.68.

CLARK, BERTHA. *The Climbing Twins and Other Stories.* Boston: Ginn & Co., 1929. Pp. vi+194. $0.84.

FOWLKES, JOHN GUY, and GOFF, THOMAS THEODORE. *The Modern Life Arithmetics:* Book One, pp. xiv+306; Book Two, pp. xiv+318; Book Three, pp. xiv+238; Book Four, pp. xiv+240; Book Five, pp. xiv+258; Book Six, pp. xiv+262. New York: Macmillan Co., 1929.

GUITTEAU, WILLIAM B., and WINTER, NEVIN O. *Seeing South America.* Evanston, Illinois: Row, Peterson & Co., 1929. Pp. 336.

HARPER, WILHELMINA, and HAMILTON, AYMER JAY. *Far-away Hills,* pp. xiv+366; *Helps for the Teacher,* pp. viii+28. New York: Macmillan Co.

Little Folk's Library: First Series; Second Series (edited by Catherine T. Bryce and Edna Turpin). New York: Newson & Co., 1928.

LYNCH, MAUDE DUTTON. *Billy Gene and His Friends.* Boston: Ginn & Co., 1929. Pp. 126. $0.68.

MCBROOM, MAUDE. *The Course of Study in Written Composition for the Elementary Grades.* University of Iowa Monographs in Education, First Series, No. 10. Iowa City, Iowa: University of Iowa, 1928. Pp. 104. $0.75.

MCGOWAN, ELLEN BEERS. *Soap Bubbles.* New York: Macmillan Co., 1929. Pp. viii+248. $0.80.

MURRAY, CLARA. *The New Wide Awake First Reader.* Boston: Little, Brown & Co., 1929. Pp. 128. $0.70.

RAND, HELEN. *Better Sentence Builder:* Fifth Grade, $0.21; Sixth Grade, $0.21. Chicago: Scott, Foresman & Co., 1929.

SERL, EMMA. *Everyday Doings in Healthville.* Newark, New Jersey: Silver, Burdett & Co., 1929. Pp. 128.

SMEDLEY, EVA A., and OLSEN, MARTHA C. *The New Third Reader.* Chicago: Hall & McCreary Co., 1929. Pp. 288. $0.84.

SMITH, DAVID EUGENE, LUSE, EVA MAY, and MORSS, EDWARD LONGWORTH. *Walks and Talks in Numberland.* Boston: Ginn & Co., 1929. Pp. 182. $0.72.

STEVENS, CECIL E. *Before Columbus.* Newark, New Jersey: Silver, Burdett & Co., 1928. Pp. x+192.

THOMSON, JAY EARLE. *Aviation Stories.* New York: Longmans, Green & Co., 1929. Pp. vi+250. $1.00.

PUBLICATIONS OF THE UNITED STATES BUREAU OF EDUCATION AND OTHER MATERIAL IN PAMPHLET FORM

BIERI, MARGARET M., and ARCHER, C. P. *Improvement of Reading in Rural Schools through Individual Instruction.* Moorhead, Minnesota: State Teachers College, 1928. Pp. 52.

ORLEANS, JOSEPH B., and ORLEANS, JACOB S. Orleans Geometry Prognosis Test. Yonkers-on-Hudson, New York: World Book Co., 1929.

Recent issues of the Bureau of Education:

Bulletin No. 16, 1928—*Secondary Schools of the Southern Association* by Joseph Roemer.

Bulletin No. 19, 1928—*Statistics of Education of the Negro Race, 1925–1926* by David T. Blose.

Bulletin No. 20, 1928—*Laws Relating to Compulsory Education* by Ward W. Keesecker.

RETAN, GEORGE A., and ROSS, BLANCHE R. *Outlines for Observation for Student Teachers.* Ann Arbor, Michigan: Edwards Bros., 1929 (mimeographed).

WILLIAMS, LEWIS W. *Supply and Demand as Applied to High-School Teachers.* Bureau of Educational Research Circular No. 50. University of Illinois Bulletin, Vol. XXVI, No. 26. Urbana, Illinois: University of Illinois, 1929. Pp. 12.